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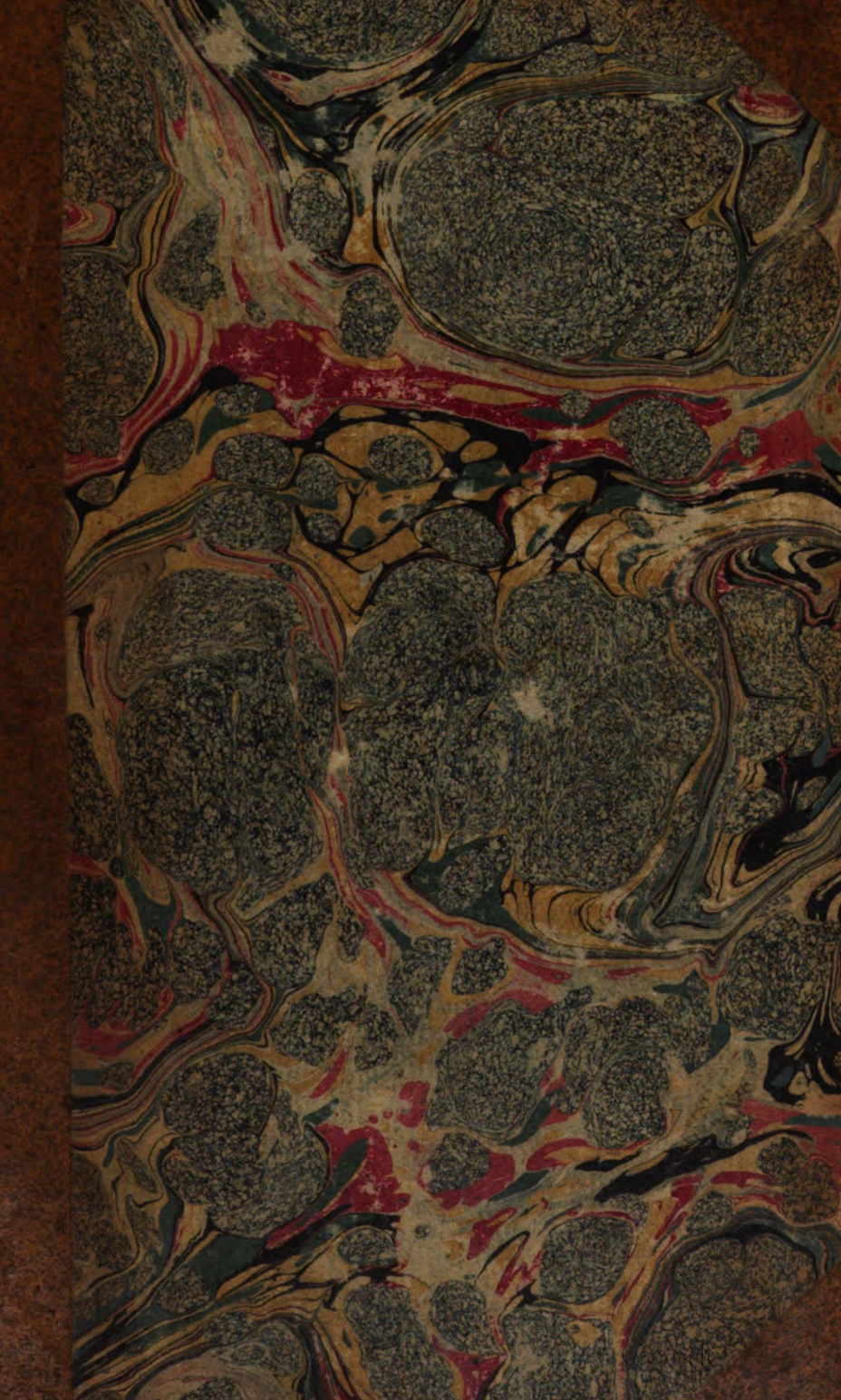

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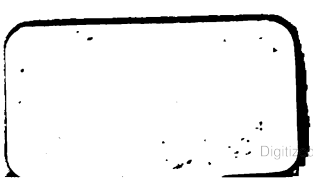

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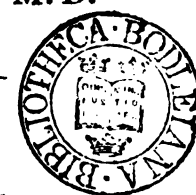

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Fig. 2.

Fig. 3.

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THE

Medical and Physical Journal.

VOL. XI.] JANUARY 1, 1804. [NO. LIX.

Printed for R. PHILLIPS, *by* W. Thorne, *Red Lion Court, Fleet Street, London.*

PRACTICAL OBSERVATIONS ON THE OPERATION FOR THE STONE. *Communicated by* Mr. BARLOW, *of Blackburn, Lancashire.*

[With Engravings.]

THE extraction of the stone from the human bladder, by the operation of Lithotomy, has, from the earliest periods of Surgery to the present day, been ranked amongst the most difficult and dangerous operations, and has particularly engaged the attention of many ingenious men; and a multiplicity of instruments have been invented, to facilitate its performance. Annexed to the following remarks, I have sketched an outline of the bistoire caché,* with a beak and staff, with a contracted groove for the beak of the bistoire to slide in. Should this additional invention to this instrument, together with the observations contained in the following pages, meet your approbation, they are at liberty for insertion in your valuable Journal; and if the inexperienced operator be hereby prevented from error, my intention will be fulfilled.

The stone in the urinary bladder is a disease, which neither sex, nor age, are wholly exempt from, nevertheless men are much more liable to this complaint than women, owing to the peculiar conformation of the urinary organs.

Notwithstanding the assiduity bestowed by the Faculty, in endeavouring to find out a specific solvent for the stone, it is truly lamentable to observe, that, hitherto, the most ardent attempts have proved ineffectual. Though stones are more frequently found in the bladder and kidneys than other parts of the system, nevertheless there are numerous instances recorded by writers, of stones being found in

* We are indebted for the original contour of the bistoire caché, to Frere Cosme, a French surgeon.

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almost every part of the human body.* If a stone be once formed of a magnitude too great to be expelled naturally by the urinary channel, it is highly probable that the art of Medicine can effect no salutary change on the stone, sufficient to destroy its texture completely, though in some particular constitutions, and periods of the complaint, I am disposed to believe, that certain medicines may so far counteract the disposition to the formation of calculi, as to prevent in some degree their further growth for a certain time, and may also produce a change in the bladder, sufficient to appease the consequent irritability excited by the existing stone; it yet remains a task for the chemical philosopher, to point out hereafter a menstruum sufficiently powerful to decompose the urinary calculi in the bladder, without injury to that viscus; and it is to be ardently hoped, that the time is not far distant, when this arcanum will be disclosed. It would be foreign to my present purpose, to enumerate the various medicines, which have at different periods been administered to abate the distressing symptoms of this disease, or otherwise intended to destroy the texture of the calculi in the bladder; it is sufficient in this place to observe, that the hazard attending the exhibition of lithontriptics, if not cautiously administered, may prove deleterious to the constitution of the patient; and when entrusted to the empiric, the most pernicious consequences may be dreaded, insomuch that in some instances the patient's health has suffered irreparable injury, and the advantages otherwise derivable from lithotomy have been thereby precluded.

Though most authors have enumerated various symptoms, as being unequivocal marks of the existence of stone, yet these are not to be considered altogether as distinct and infallible guides; some of the symptoms accompanying

* It is to be observed that quadrupeds, and every human being, are liable to calculous concretions being deposited in different parts of the body, and many instances are recorded by authors, of the existence of stones in the bladder and kidnies of different animals of an enormous magnitude. Morgagni relates several examples which occurred to him when employed in dissecting dogs; in the bladder of one of these animals he found a stone which weighed a pound and a half.

In the Memoirs of the Royal Academy of Surgery at Paris, there are many instances related of calculous concretions being found in the matrix, by M. Lewis; and in the Journal des Scavans, is a remarkable case of the same kind; and whoever wishes to investigate the subject more minutely, may peruse the works of the following authors, Marcellus Donatus, Tolet, Ambrose Parey, Hildanus, Le Dran, Hody, Lieutaud, Bailie's Morbid Anatomy, and Friend's History of Physic.

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ing stone in the bladder are very similar to other affections of its appendages; such, for instance, are the diseases of the kidneys and prostate gland; and in some instances the mind of the patient has been strongly impressed with a vague idea of the existence of a stone in the bladder, but on a thorough investigation of the malady, it has sometimes been found to originate from some occult disease affecting the vicinity of the bladder, which on a superficial inquiry very much resembled the symptoms so often concomitant on stone in the bladder.

The difficulty and danger attendant on the operation of lithotomy, has been pointed out by most surgical authors, and in the earliest periods of medicine, of which we have any traces of this malady transmitted to us; we find the operation was principally ordained by the antients to be confined to a select class of men, who made it their peculiar business, and who were termed by the Greeks Lithotomi, and are called by the moderns Lithotomists; this we perceive is sufficiently illustrated in the oath of Hippocrates,* and fully accords with this axiom in Horace:

"——— Quod medicorum est
Promittunt medici, tractant fabrilia fabri."

Where, amongst other ingenious precepts set forth therein by this venerable author, I will relate one to elucidate the candour and purity of mind which this father of medicine possessed. "I swear, says he, by Apollo the physician, by Esculapius, by his daughters Hygeia, Panacea, and by all the gods and goddesses of the Heathen Mythology, that cutting for the stone I will not meddle with, but leave it to the operators in that way." Hence it is highly probable, that the mode of operating for the stone, at this early period, was solely confined to a set of empirics, who, in all likelihood, kept it a secret.

Celsus is the first author who has given any particular account of this operation, from which it has derived the appellation of the Celsian or Guidonian method, or Apparatus Minor, or Cutting upon the Gripe;† and was the

* Though Hippocrates, as also some of the less antient writers, have ranked wounds of the bladder as being inevitably mortal; yet many examples are to be found to the contrary, amongst the works of Tulpius, Vanderviel, Paré, Bauhin, Hildanus, Morand, and others.

† This operation of cutting on the gripe, has since the time of Johannes de Romanis, been called cutting with the lesser apparatus, by way of distinction from his new method of operating, named the greater apparatus, or apparatus magnus, from the greater number of instruments employed in it.

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chief mode of operating promulgated during the space of sixteen centuries. Celsus directs the operator to introduce the fore and middle fingers* of the left hand into the anus of the patient, (if a male) and lay his right hand lightly upon the lower part of the abdomen; by this means the stone is brought to rest upon the neck of the bladder; a lunated incision is then to be made in the skin, near the anus, as far as the neck of the bladder, with the horns pointing a little towards the ischia; then, in that part where the bottom of the wound is straiter, under the skin, a transverse wound must be made, by which the neck of the bladder will be cut, and the urinary passage be something larger than the stone; when the opening is finished, the stone comes into view, which, if small, may be pushed forwards, and taken out with the fingers; but, if large, it must be extracted with the uncus or crotchet.† Various conjectures have however been advanced by authors, respecting the exact method in which Celsus operated; and to settle this point in dispute would be a task neither easy nor useful, more particularly when we consider the imperfect state in which anatomy was understood during the period in which this author lived; and it is probable, that this method, as above described, was not the only one of extracting the stone from the bladder in the days of Celsus, though he is silent on that head.‡ The method of operating described by Celsus, though easily effected upon young and spare subjects, is nevertheless attended with considerable hazard by the transverse incision, for if either the vesiculæ seminalis, or the vasa deferentia, be divided, or their excretory ducts wounded, their functions will be destroyed, and a privation of all future procreation will be incurred; and the same consequences ensue as if castration had been performed; and some one or other of these parts, by the semilunar and transverse incision as above directed by Celsus, must be inevitably wounded in the operation,

* P. Egineta was the first writer who directs the operator to use the fore-finger only, and this practice is certainly more eligible, particularly in young subjects.

† It is a little surprising that Celsus should limit the operation to those between the age of nine and fourteen years, as it is probable his mode of operating would be equally eligible during the periods of old age and infancy. Paulus differs in some respects from Celsus on this point, for he allows the operation to be practicable both in the middle and sometimes in an advanced age.

‡ Albucas's, an Arabian physician, has given a pretty full account of the operation of lithotomy, particularly in women.

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operation, particularly if the stone be of considerable size; these objections have no doubt caused the Celsian method to be almost universally exploded.

The GREAT APPARATUS, (or *Methodus Mariana)* was invented by Johannes de Romanis, and made public by his scholar Marianus, about the year 1535. In this operation a grooved staff is conducted into the bladder along the urethra, the handle of which is to be turned over the right inguen of the patient, by which the concave part of the staff will appear prominent in the urethra, on the left side of the perineum, in which position it must be secured by an assistant with one hand, while he raises up the scrotum with the other; the operator then makes an incision from the termination of the scrotum, and on the left side of the perineum, to within an inch of the anus; the urethra is next to be divided, from its bulb to the commencement of the prostate gland; and this is usually effected by turning the back of the knife towards the anus, and finishing the incision in the direction towards the scrotum. The urethra being thus laid open, a conductor, or blunt gorget, is to be introduced into the bladder, and the staff withdrawn; the neck of the bladder is then to be dilated sufficiently to allow the extraction of the stone, and various instruments have been invented for this purpose. This operation appears liable to many objections, for neither the prostate gland, nor the neck of the bladder, are divided by the scalpel; and the dilating of these parts sufficiently for the purpose of extracting the stone, must unavoidably produce considerable laceration, and not unfrequently irreparable injury to the patient. The more antient method of cutting upon the gripe might probably be executed with more ease, and greater safety to the patient, than by the great apparatus; provided the operator, after fixing the stone on the left side of the perineum, made the incision in the manner directed in the lateral operation.

Of the High Operation, or Apparatus Altus.

This operation was made known in the year 1561, by Pierre Franco, who performed it with success, on a boy of two years old, at Lausanne, in Switzerland; for on finding the stone too large to be extracted by the operation in the perineum, he had recourse to the high operation, as a method of necessity, rather than choice, and attributes his success more to chance than art, and earnestly dissuades his professional brethren from imitating the practice, and wholly abandons the operation in future himself; since

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which time no examples are recorded of the high operation, till about the year 1719, when Mr. Douglass and Cheselden adopted this method in England, and afterwards the same mode of operating was practised by Morand, in France.

It is the middle of the anterior part of the bladder, where the incision is to be made in performing this operation; but except this viscus be considerably distended, which is very seldom the case when affected with this malady, there is much danger of wounding the peritoneum; and to avoid this, different methods have been proposed and adopted, with a view of distending the bladder to facilitate the operation; some authors recommend air forced therein by a pair of bellows,* others prefer injections of warm water prior to the operation, and to be retained in the bladder, by means of compression upon the urethra; another method has been adopted of allowing the patient a liberal use of diluent liquors for some time before the operation, and securing the urine in this viscus with a ligature upon the urethra; this last mentioned mode of distending the bladder appears to me the least objectionable, as there is certainly much risque incurred by whatever means that organ is artificially distended, for if the tone of the muscular fibres be destroyed, all hopes from the operation of lithotomy may be abandoned.†

In order however to identify the plenitude of the bladder, in its natural state, the finger of one hand of the surgeon may be introduced into the anus of the patient, and the other hand be laid on the hypogastrium; and by an alternate pressure from these two points, the operator may form a tolerable idea of the capacity of this viscus, and probably enable him to ascertain, in some degree, the size of the stone; some knowledge may also be acquired of the internal capacity of the bladder, by observing the quantity of urine discharged by the patient at different intervals before the operation; and this may in some measure tend to direct the operator of the certitude with respect to the quantity of liquor it is proper to inject or restrain in the bladder, without proving injurious.

When the operation is to be performed, and every thing in

* It is more than probable that Franco did not distend the bladder, either by injection or inflation, upon the child, on whom he cut after the high operation.

† Cheselden relates a fatal instance, where the bladder was burst by injecting too much water into it.

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in readiness, an incision is to be made in a line with the linea alba, and a little to one side, beginning about four inches and a half above the ossa pubis, (if an adult) and bringing it down to the junction of the symphisis; the integuments being thus divided, the incision must be carried between the recti and pyramidal muscles, down to the bladder, which viscus is then to be laid open in a direction parallel with the external wound, but not quite to the same extent; the bladder is then to be punctured, and the ligature on the penis at the same time removed, lest the water be extravasated in the cellular texture; the stone is then to be extracted by manual assistance, and the wound of the integuments secured by a few sutures, leaving a small opening at the part next the pubis for the purpose of permitting any discharge which may accompany the progress of the cure.

It is evident that larger stones may be extracted by this operation, and with greater facility to the surgeon than by any other means yet adopted, and various have been the opinions of authors, respecting the advantages and disadvantages attendant on the high operation, when compared with the other methods; nevertheless, when the stone is of a magnitude too great to be extracted by the lateral operation, the high operation undoubtedly presents a resource, confirmed by the authority of authors of the greatest veracity, such for example are Francus, Winslow, Colot, Middleton, Cheselden, Greenfield, Garengeot, Thornhill, and Heister.*

Morand, in a dissertation on the high operation for the stone, says, "Though I am convinced of the advantages and facility of this operation compared with the method of Marianus, I think it would be imprudent to undertake it upon all without distinction; perhaps it may have been their performing it upon all indifferently, that has a little discredited it in England;" and he further remarks, "That the high operation is the only sure method of extracting large stones and those which are contained in some particular bag† of the bladder, as has been often seen."

To

* This last mentioned author records a case wherein he failed in extracting a fragment of a stone by cutting in the perineum, and was afterwards under the necessity of having recourse to the high operation.

† Though the existence of stones being found encysted, or adherent in the bladder, has been much doubted by some writers, yet many instances of such cases having occurred, are related by the following authors, Schenkius, Mercurialis,

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To shew further the high estimation with which this operation was at one time held, I will transcribe a passage from Douglass, in the Appendix to his Translation of Morand's Dissertation on the Stone. "From all which I think I may justly infer, that we ought to make the high operation in all cases from five to fifty years of age, when the patient is otherwise in a good state of health, because experience, the best of all arguments, shews that such patients stand a better chance of living after this than any other method; and above all, have no ground to fear being plagued during life with a fistula, incontinency of urine, or of being made impotent by it; one or all of which often succeeds the other operations."

It appears evident from these testimonies, and the history of some remarkable cases, that the high operation would be more safe and eligible, under some particular circumstances, than the lateral method, and particularly where there is ground to believe the stone to be either very large, or a number of stones cohering to each other, or where the bladder is divided into two or more bags or cavities; such cases, for example, are related by different authors. Hildanus mentions the case of a young man of twenty years of age, from whose bladder he extracted a stone which weighed 22 ounces, and had the figure of a cupping glass; the patient however died in the hands of the operator. See Cent. iv. Obs. 5; also Cent. iv. Obs. 50.

It is asserted that Collot Germain, an eminent French surgeon, performed the operation of lithotomy with success upon a criminal in the reign of Louis XI. King of France, and though historians are divided in opinion with respect to his mode of operating, yet there is some reason to suppose he adopted, in this instance, the high operation, because, among other circumstances, he mentions the reduction of the intestines, and the suture of the abdomen. If this was the case, it is probable that he was the first Lithotomist who attempted the section above the pubis; and may we not from hence, with more propriety, date the epocha of the high operation to this incident of the criminal,

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Mercurialis, Fernelius, Bauhin, Barbette, Holerius, Heister, Sharp, and Dr. Preston, in the Philosophical Transactions, and also the Memoirs of the Royal Academy of Surgery at Paris. M. Desault in the Parisian Chirurgical Journal, has given a plate representing an instrument he has invented, called a Kyst-tome, which appears well calculated for the purpose of facilitating the extraction of encysted stones; and I am informed it has been used in this country with success.

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minal, as recorded by Collot, than to that related by Franco on the child at Lausanne in Switzerland; for Collot lived near a century antecedent to that of Franco, who has hitherto been universally applauded as the promulgator of the Hypogastric section.

Louis the Seventh reigned from the year 1461 to 1483, and Collot then being one of the first Lithotomists in that kingdom during the reign of this prince, his superior skill in operating is said to have descended to his posterity; and Philip Collot, a descendant of the same family, made some valuable improvements in the apparatus and method of operating.

Of the Lateral Operation.

The epocha in which the lateral operation was first promulgated was in the year 1697, by an ecclesiastic, whose name was Frere Jaques; he arrived, says Dionis, at Paris, as a sort of monk, in the habit of a rocolet, with this difference only, that he wore shoes, and instead of a cowl had a hat. He assumed the name of Brother James, and appeared plain and ingenuous; his diet was very sober, he lived on pottage and bread only; he had no money, and never asked any more than a few sols to pay for the setting of his instruments and mending his shoes. He formed to himself a religion according to his own fancy, backed with vows, the liberty of dispensing with which he left to his ordinary at pleasure. On coming to Paris, he produced a number of certificates as a testimony of his dexterity in operating in several provinces of France, which being presented to the surgeons of l'Hotel Dieu and de la Charité, his offers were rejected, as not being customary to expose hospital patients to the risk of experiments; nevertheless, a dead body was procured, into whose bladder a stone was conveyed, and which Frere Jaques extracted in the presence of many surgeons; but his method not being approved of, and Jaques finding himself coldly received by the physicians, resolved to leave Paris and retire to Fontainbleau, where he met with encouragement; for being allowed to operate on a boy from Versailles, and the operation succeeding, he thereby gained much applause; it is however extraordinary he used no preparatory regimen, or medicines, to his patients, nor troubled himself after the operation with any application to the wound, except a little oil and wine, on which he relied for the cure. It is said he was so intrepid in his operation, and negligent with regard to his patients, that when he was entreated by them for his more

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more particular attention, he would answer, it is sufficient that I have extracted the stone, God himself will cure the wound. The reputation of Frere Jaques spread rapidly, and he afterwards returned to Paris, where he continued to practice gratuitously, and with tolerable success, for some time; but the excruciating tortures which the Marshal de Lorye suffered from his rash treatment, gave cause for the chief surgeons to investigate more particularly into his mode of operating; and this enquiry turning out unfavourably for Jaques, the consequence was that his reputation as a lithotomist was lost, and he became afterwards branded with ignominy, insomuch that even his partisans considered him a rash and ignorant operator; he therefore quitted France, and travelled through Germany in the capacity of a lithotomist. But Mr. Sharp appears to have a more favourable opinion of his mode of operating than most authors, for in his Treatise on the Operations of Surgery, he says, Jaques knew more of lithotomy than is generally imagined; for he saw when in France, a Treatise on this operation, published by Jaques, in the year 1702, wherein his method of operating is described as not being essentially different from the lateral operation as practised in his time; and as a further proof of the success he acquired, there is a certificate annexed to the publication, where it is asserted he had cut thirty-eight patients successively at Versailles, without losing one, and had so much improved his apparatus as to make use of a grooved staff.

The lateral operation, as practised by Frere Jaques, being so generally known, it is unnecessary in this place to enter into a detailed account of his invention; it will be sufficient to give a brief narration of the lateral operation as now practised by most lithotomists. It may not, however, be improper first to recite the boundaries, and parts connected with the operation, as guides to facilitate its performance with greater safety to the patient; these are the symphysis pubis, raphe, tuberosity of the left ischium, anus, and the convex projection of the staff in the perineum. The parts to be avoided in the operation are, the bulb of the urethra, the pudical artery, rectum, and vesicula seminalis. When the patient is properly secured, and every thing in readiness for the operation, the surgeon should introduce the staff and distinctly feel the stone, after which the handle of the instrument must be made to pass over the right groin of the patient, and be secured in the situation by an assistant, in such a manner that the concave part may be evidently felt on the left side of the perineum;

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perineum; then the surgeon, with the utmost coolness and undaunted firmness, must begin the incision about an inch below the termination of the scrotum, a little under the arch of the ossa pubis, and rather on the left side of the rapha, cutting through the skin and cellular substance, in an oblique direction, for the space of four inches, (if an adult) along the perineum, and in an equal line betwixt the tuberosity of the left ischium and anus, and terminating about an inch below the approximation of these two points; the skin and cellular membrane being divided, the muscles are then to be intersected in a line with the staff, and external incision; the groove of the staff should then be found, by pressing the point of the fore finger of the left hand against the sulcus, as a guide for the point of the knife; the membranous part of the urethra is then to be divided, and this may be effected with greater safety by turning the back of the knife downwards; and the index of the operator's left hand being made to press down the rectum, whilst the cutting edge of the knife divides the membranous part of the urethra upwards, along the sulcus of the staff, the whole length from near the commencement of the prostate gland to the bulb of the urethra; the back of the gorget is then to be conducted into the groove of the staff, about an inch from the prostate gland; the operator then takes hold of the handle of the staff with his left hand, which he elevates to nearly a right angle with the body of the patient; he then raises himself from his seat, and, at the same time, with the staff in the left hand, and the gorget in the right, with its beak in the sulcus, he makes a uniform pressure with one hand against the other, and gently pushes the gorget along the groove, at the same time depressing the handle, till it has evidently passed into the bladder; the staff is then to be gently withdrawn in a direction, with the concave part towards the pubis of the patient; the fore finger of the operator's right hand is then to be passed into the bladder, upon the gorget, and if the stone can be thereby detected, the gorget may then be withdrawn, and the middle finger of the same hand be introduced in its place; the stone may generally be extracted by the combined efforts of the two fingers thus acting as forceps; if this however cannot be accomplished, the forceps must then be cautiously introduced along the fingers into the bladder, which are then to be withdrawn, and the stone searched for with the forceps, and extracted according to the precepts so minutely described by authors.

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It is to be observed, that in emaciated subjects, and where the operator is perfectly acquainted with the anatomy of the parts connected in lithotomy, I am persuaded the division of the prostate gland, and the necessary portion of the neck of the bladder, may be much more easily and safely executed, with either the common scalpel, or a beak pointed bistory, than the gorget; and particularly in cases where the stone is fixed at the neck of the bladder, and the natural entrance into that viscus is so much blocked up, that the complete introduction of the staff is impracticable. Thus circumstanced, the operation may be best effected by the surgeon passing the staff to the place of obstruction, and then making an incision with the scalpel into the urethra on its point, and after withdrawing the staff, the beak pointed bistory (as represented in the annexed plate) is to be gently passed along the urethra, by the side of the stone, into the bladder, and the division of the prostate gland and neck of the bladder be made by withdrawing the instrument, and executing the division of the parts in a lateral direction, as hereafter specified in the use of the improved bistoire caché. For example, the cases requiring this mode of treatment may be found in the Medical Facts and Observations, vol. 8; Medical Records and Researches, London Memoirs, vol. 5, Ingram's Observations in Surgery, Saviard's Surgical Observations, and the Edinburgh Essays and Observations, vol. 3.

I have thus given a brief history of the various methods of extracting the stone in men, which has at different periods of time been sanctioned by cotemporary lithotomists, and it is hoped the chirurgical reader will not accuse me of palpable omission, in not having entered more fully* into the collateral incidental circumstances sometimes attendant on lithotomy; for, though conciseness has been my aim, yet I hope this general outline will be sufficiently illustrative of the subject, as to convey an adequate idea of the utility consequent on the following remarks; I nevertheless flatter myself, that the additional improvement which

* It is my intention, should these pages meet the approbation of the public, on some future occasion, to prosecute the subject still further, by drawing a few practical inferences of the comparative advantages, and disadvantages, attendant on each mode of operating; together with the regimen necessary to be observed; and also observations on the formation and decomposition of calculi in the bladder, with remarks on the operations of Nephrotomy, &c.

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which I have made to the bistoire caché, as represented in the third volume of the Medical and Physical Journal, will be sanctioned by most lithotomists; and though I have operated oftener than once successfully with the instrument above alluded to, yet its defects have to me appeared distinctly palpable. The diversity of alteration which the gorget has undergone, with a view to surmount certain difficulties attending its introduction into the bladder, are a sufficient apology for practical novelty; yet it is a matter of doubt, whether the advantages from such a multiplicity of interchangeable discoveries, which have succeeded each other in the apparatus belonging to this operation, have been altogether realized in the same ratio with their numbers; it is however at all times to be wished, that in proportion as the art of surgery improves, the number of instruments will be proportionately retrenched; nevertheless, I have to crave the same indulgence in this respect, in common with others of the profession, who have attempted to add something to the stock of surgical improvement; and if I have failed herein, let it be remembered that I have endeavoured to be useful without prolixity; and perhaps I may at least be entitled to some portion of gratitude from the reader, in having condensed into a narrow compass a number of facts and opinions relative to Lithotomy, which are dispersed amongst the works of a multiplicity of surgical authors, and which I have reason to believe are not always easy of accession to the generality of readers, without considerable expence, and ardent application. The work of the gorget is to divide the prostate gland, and a portion of the neck of the bladder; but if the practical surgeon attentively and impartially views the mechanism of this instrument, and the parts to be divided, and avoided, in the operation, he will not hesitate to determine that its construction is not well adapted to execute the purpose for which it was invented; and it is doubtful whether ever it can be used, even in its most improved state, with perfect safety, unless the bladder be in a state of distension; which is seldom the case when indicative of lithotomy. In operating for the stone in the common way, there is evident danger of the beak of the gorget slipping out of the groove of the staff; and if pushed to the hilt with the customary force, and to the same distance in every individual case, whether the bladder be collapsed or distended, it is evident, that by this rash mechanical impulse, the point of the gorget may pass through

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through the back part of the bladder, and puncture the rectum; this dangerous circumstance has been known to happen under the guidance of the most celebrated lithotomists; nor can the gorget make so clear a cut as is to be wished; for, as the parts to be divided are movable by pressure, and apt to recede before the point of any instrument so constructed, it is manifestly evident that a compleat section will be thereby difficult to make. The danger which the gorget incurs to the patient, by being pushed precipitately along, and the liability of its either slipping out of the groove of the staff, and penetrating the intestines, can scarcely be pointed out in terms sufficiently cogent to prevent impendent mischief; but the bistoire caché, with the additional beak, is totally exempt from such accidents, and it is not improbable that most of those patients who have died of this operation, when free from any other disease, have suffered from this accident. Vide Benj. Bell's Surgery.

The bistoire caché in common use, I must acknowledge, is considerably less liable to this accident than the gorget, but is in other respects subject to do mischief, owing to the liability of the point of the instrument sliding out of the groove of the staff; and if much force be used (though not absolutely necessary with this instrument) at this period of the operation, and this event take place, the point of the bistoire may do irreparable injury, by being pushed into the rectum, either before, or after having passed into the bladder. On deliberate refleçtion, I am firmly convinced that these difficulties and dangers attendant on either of these instruments will be obviated by the use of the improved bistoire caché as before mentioned, together with a grooved staff, as represented in the same annexed plate. Their use are as follows: After the operator has introduced the staff with the contracted groove into the bladder, and so far proceeded in the operation as to have completely divided the membranous part of the urethra, he then, with the beak of the bistoire when shut, conducts it into the sulcus of the staff, at the part where the contraction commences, and then gently and without force pushes it along the groove into the bladder; this step of the operation will be generally identified, either by a flux of urine, or the detection of the stone by the point of the instrument; the staff is then to be withdrawn, and the operator may, by moving the bistoire, ascertain the capacity of the bladder, and probably form some idea of the magnitude,

situation

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situation, and number* of stones contained in that viscus; after which the instrument is to be opened to the extent fixed by the screw at the handle, before its introduction, and the cutting edge is then to be turned obliquely outwards and downwards, that the prostate gland may be divided nearly on the left side, and rather in this direction than horizontally lateral; the surgeon then withdraws the instrument in a straight line towards himself, and with a degree of celerity sufficient to execute the division of the prostate gland, and a part of the neck of the bladder, proportionate to the size of the patient, and sufficient to allow a free exit of the stone, and in a manner most likely to promote a speedy union of the parts; the operator should on withdrawing the bistoire, keep in mind the anatomy of the parts which are to be divided, lest by inattention, the erector penis, and probably a branch of the hypogastric artery, named pudica externa, be divided, and the functions of the parts be thereby destroyed; and should the instrument be placed with the cutting edge too much inclining towards the anus, and be withdrawn in that direction, there will be danger of wounding the vesicula seminales, and intestine. By an attention to these directions, the surgeon will be enabled to perform this important part of the operation with greater ease to himself and safety to the patient, than by the use of the gorget.

Many important advantages I am confident will be attained both to the surgeon and patient, by this mode of operating; and I trust it will appear to the ingenious lithotomist, that this instrument, when used with the contracted grooved staff, claims an established preference over any other invention yet made public. There is in the Medical and Physical Journal, a description of an instrument with a plate annexed thereto, intended to supersede the use of the gorget, and invented by Mr. Watt of Paisley, which appears to possess some advantages over this instrument; it

* Various instances are recorded by authors, respecting the number of stones occasionally found in the bladder. I had lately a case under my care of a man, near eighty years of age, out of whose urethra I extracted more than twenty stones, some of which were very large; after death, leave was obtained to inspect the bladder, and out of this viscus nineteen stones were extracted, three of the largest were each of the size of a pullet's egg; the bladder was very much diseased, and in some parts was three-fourths of an inch thick; these stones had a very irregular surface, though there was much uniformity in their shape; they were all of a light and chalky nature.——. Hildanus relates the history of a young man who emitted 300 stones by the urethra. Centur. 1, Obs. 89.

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it has, however, this imperfection, that by being made nearly straight, its introduction into the bladder along the sulcus of the common staff, will incur some embarrasment to the operator and danger to the patient. Another material objection to this instrument is, that if the prop or cutting part be raised out of the groove, it forms an acute angle, consequently will be liable to cut a greater portion of the neck of the bladder than is absolutely necessary, but in other respects is not very dissimilar to the one I have been describing.

The apparatus invented and represented by Sir James Earle, in an appendix to his treatise on Lithotomy, has the merit of ingenuity, and may be a guide to the young operator, in determining the line proper for making the external incision, and the division of the urethra, but is not intended altogether to supersede the use of the gorget, therefore it does not become manifestly necessary in this place to elucidate its use; it may be proper, however, to observe, that in the application of this instrument there will be some difficulty in adjusting the parts of the two staffs exactly together, owing to the tendency which the short staff may occasion by a small deviation at the hinge.

Occidit qui non servat.

Of the Extraction of the Stone from Women.

It has been before observed, that the female sex are much less liable to the existence of stone in the bladder than males, chiefly because the neck of that organ in females is not surrounded with the prostate gland as in men, and the cavity of the urethra being much shorter, less curved, and more easy of distention, renders the spontaneous evacuation of calculi through the canal of the urethra a more common occurrence, consequently the operation of lithotomy becomes seldomer necessary in the female than the male; and if we peruse the works of some authors who have treated on the subject, and credit their accounts of the enormous size of stones naturally discharged or extracted from the urethra, we shall be almost led to believe that the operation of lithotomy will very rarely, if ever, become necessary in females. Such, for example, is the case related by Borelli, (Cent. 2, Obs. 22) of a stone coming spontaneously from a female the size of a goose's egg. Kirkringius and Bartholin, each describes one as large as a hen's egg. And for more instances of a similar nature, the reader may consult the works of Celsus, De Graaf,

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Graaf, D. Hieronymus, Tulpius, Middleton, Colet, Morand, and the Philosophical Transactions.

The earthy particles of the urine have the attractive quality of generating calculi, and adhering to any foreign indissoluble substance in the bladder; which, if not timely expelled, may afford a basis for the formation of a stone. Numerous instances are recorded by authors of needles, bodkins, and other extraneous substances, having been thrust up the urethra into the bladder of females, and become a nucleus for a stone. Morgagni relates several cases illustrative of this fact; and one of a man, in whose bladder, on dissection, was found a calculus of a considerable size, and a needle buried in the centre. A similar instance is mentioned in the Edinburgh Medical Essays and Observations, vol. iv. See also Cheselden, Parey, Tolet, and Dionis. Mr. Proby, in the Phil. Trans. No. 260, page 455, relates a case of a bodkin being successfully extracted out of a woman's bladder by the high operation. See also Medical and Physical Journal, vol. 9. Dr. James, in his Medical Dictionary, relates an instance of a gentlewoman being in labour, and attended by a man-midwife. "When I was called in (says he) he told me the stone was so unluckily situated, that it was impossible to deliver her, every pain bringing the stone into the passage; and was of opinion that the stone should be taken away immediately, before she could be delivered. This however I opposed, and the patient was delivered by proper management. Upon searching her about two months afterwards, I found the stone situated partly in the urethra; so that by drawing the edges of the urinary passages aside, I could see it. Upon this she consented to have the stone taken away, and a day was appointed for the operation; but the morning it was to be performed, her courage failed, and she determined not to undergo it. About six weeks after, I was called again, and found she had parted with the stone spontaneously, without much pain; and afterwards she was for some months troubled with an incontinency of urine, which gradually went off, and she recovered perfectly."

Morand relates the case of a girl, eighteen years old, who by the efforts of nature alone, voided on the 29th of October, 1724, a stone from the bladder, weighing four ounces. Notwithstanding these natural advantages which females inherit, we must acknowledge that they are not absolutely exempt from the necessity of the operation of lithotomy; a case sufficiently shewing that manual assistance is sometimes required, is related in the Philosophical

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Transactsons, No. 209, p. 103, by Mr. Basil Wood; the length of the stone was 3¼ inches; in breadth where largest, is very near 3¼ inches; its thickness 1¾; and its weight nine ounces and a half averdupois. More examples of this kind might be adduced from good authority, where the stone has proved too voluminous to traverse the urethra, or even by mechanically dilating* the channel by means of the introduction of some foreign substance, or by the more dangerous method with the instrument called Dilatator or Speculum Vesicæ. There is an interesting case recorded by Mr. Bromfield, which terminated successfully, where the ingenious author introduced the closed extremity of the appendicula intestini ceci of a small animal into the bladder of a girl. Into the open end of the appendicula warm water was injected by means of a syringe, and secured externally by a ligature; and by repeatedly twisting the end which was left out, the cervix vesicæ dilated sufficiently to allow the exit of the stone. The different methods adopted by authors of dilating the urethra, may no doubt be practised with safety to a certain extent,† where the circumference of the existing stone, and the canal of the urethra, bear no great disproportion to each other; but on the other hand, where the size of the stone is supposed to present great disparity of proportion to the natural diameter of the urethra; then, to prevent laceration, the ordinary method of dilatation should be abandoned, and recourse had to either the division of the urethra, as hereafter directed, or the high operation, as Falconet, Heister, Douglass, and Morand‡ recommend.

Some authors have, under these circumstances, adopted the

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* Prosper Alpinus, in his Medicina Egypt. page 104, mentions a practice adopted by the Egyptians of inflating the urethra to effect the exit of the stone; but I find no successful examples of this method exercised amongst the Europeans.

† This circumstance is sufficiently proved by the testimony of many authors, amongst whom are Greenfield, Tolet, and Hildanus. We have also a remarkable instance of this kind related in the Miscell. Nat. Curios. Obs. Decad. 2, and 10, of a woman being freed from a stone by the dilatation of the urethra, which weighed five ounces and a half. Douglass recommends the extraction of small stones by dilating the urethra with tents of prepared sponge, or gentian root; but, on the other hand, if the stone be large, he proposes the high operation, and distending the bladder with warm water prior thereto.

‡ This last mentioned author says, "As for the woman, I believe, that if the stone be small, the common method is preferable to the high operation; but, if large, the apparatus altus is better than the ordinary method, because of the incontinency of urine, which happens through the laceration, and extravagant dilatation of the sphincter caused by the passage of a large stone."

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the method of making an opening directly into the bladder from the vagina, by which rout the forceps are conducted into that viscus, and the stone by that means extracted from the bladder. Gooch relates three successful cases of this mode of extracting the stone; nevertheless, by cutting through the vagina into the bladder, parts become unavoidably injured, which will in all probability either leave a fistulous opening, or produce a cicatrix, in the vagina; and should the patient afterwards become pregnant, it is probable that during the stage of labour, this disagreeable circumstance would either incur a laceration of the parts, or at least prove a material obstacle to delivery; hence it appears that this mode of operating is on this account objectionable, and not likely to become generally practised.

In those unfortunate cases where the stone can be identified, before the operation too far* exceed the ordinary size, it is certainly better to have recourse to the high operation, than hazard the life of the patient by breaking† the stone with the forceps in the bladder, or otherwise being compelled to the dreadful alternative of the compound operation; and this precept will perhaps be thought more applicable to men than women.

The usual method of extracting the stone from women is comparatively easy when contrasted with the operation in men; it consists in passing through the urethra into the bladder a grooved director, or staff, nearly straight, which the operator is to hold firm with his left hand, while with the right he conveys the beak of the cutting director into the sulcus of the staff, and gently passes it along the groove till it has entered the cavity of the bladder; the stone is then to be extracted, either by the fingers of the

 surgeon,

* Professor Borichius, and the celebrated Archiater, died in the operation, owing to the stone being so large that it could not be extracted at the perineum. There is a stone reserved in the Charity Hospital at Paris, which weighs 51 ounces; the man from whom it was extracted died during the operation.

† The first accounts we have on record, of breaking or splitting the stone in the bladder, is mentioned by Celsus, the author of which contrivance was named Ammonus, who upon this account, obtained the appellation of Lithotomist, or the Stone-cutter.

We are indebted to Andreas Cruce for the original invention of a pair of forceps, for the purpose of breaking stones in the bladder; this instrument, we are told, failed of effecting this purpose in the deplorable case of the celebrated Borichius above alluded to.

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surgeon, or the forceps, as is practised in the operation in men.

From the shortness of the female urethra, this operation is more safe and easy to execute than in the other sex, yet it will evidently appear much simplified by the use of the bistoire caché, as before recommended in the operation on men. The mode of using the instrument is as follows: The bistoire is to be introduced shut along the urethra into the bladder; and the surgeon having found the stone with the point of the instrument, he then presses down the handle upon the head of the screw, which elevates the cutting edge; and turning the blade towards the left side, and rather obliquely outward, he withdraws the bistoire in a straight direction, and completes the division of the parts in a similar manner as directed in the operations on men. The use of the bistoire caché is so manifestly simple, and possesses those advantages when used upon women, that it will altogether supersede the use of the sound, grooved staff, and gorget, and may be made of any size proportioned to the age of the patient; and it may be also necessary further to mention, that when used on females it may be made either with or without a beak.

Nov. 7, 1803.

REFFRENCES TO THE PLATES.

Fig. 1.

A. The bistoire cache, its length, including the blade and handle, ten inches

B. The lever which is connected with the cutting blade, and by raising or depressing the screw C. the blade is made to open or shut, and may by pressure be elevated from the sheath to a distance suitable to the age of the patient.

C. The screw, which may be raised, or depressed, at pleasure; and the crown is the prop which the lever B. is to rest upon when the blade is elevated.

D. A spring which raises the lever B. upwards, and serves to shut the instrument.

E. The beak or knob which is intended to fit the contracted grooved staff, Fig. 2, and the neck of the beak is to be made rather flat, to give stability thereto, and yet so small that it will pass freely along the contracted part, without letting the beak slip out till it arrives at the open point of the staff.

F. The blade, the point of which, for the space of three lines, is to be left obtuse, to prevent injuring the coats of the bladder.

Fig.

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Fig. 2.

A grooved staff left open at the convex part, for the purpose of receiving the beak of the bistoire E. Fig. 1. and also an opening at the point, for the space of half an inch, for the exit of the beak, after having passed the narrowed part of the staff as far as the opening at the point.

Fig. 3.

Represents a bistory, its whole length seven inches, with a beak, or knob, and a small neck, so adapted as to slide freely, either in the groove of the staff, Fig. 2. or the common staff. This instrument appears well calculated to supercede the use of the gorget, when used on women, and may answer other purposes in various surgical cases.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I Shall be happy if you find the following Observations, taken from the notes I kept in the Mediterranean, worthy of a place in your Journal. They relate to a subject which has of late excited some attention in the medical world, though much less than it merits; I mean, the efficacy of the cold affusion in ardent fever.

The Second, or Queen's Regiment of Foot, forming part of Sir Ralph Abercrombie's army, arrived from England at Minorca, on the 21st of July, 1800. Being sent to attend a detachment of it on board the Thisbe frigate, and afterwards doing duty with the whole regiment on shore, I had occasion to observe the facts I am now to describe.

The men enjoyed good health while on board, with the exception of two or three cases of intermittent fever, which had broke out on the passage, and a cholera morbus, which appeared in the harbour in an alarming form, though with no fatal consequences. But on the 11th of August, two days after they were landed at Mahon, an ardent fever appeared among them, which in a little time made considerable progress.

For a whole week sixteen men, on an average, were taken ill each day. Their complaints, for the most part, came on suddenly, and very often when they were on parade. After slight languor and debility, the patient was all at once seized with violent head-ach, giddiness, pains, and extreme debility in the lower extremities, rendering him totally un-

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able either to stand or walk. When he was brought to the hospital, we found him labouring under all the symptoms of the most violent pyrexia, increased heat, quick pulse, and urgent thirst. Two or three of them had very frequently alternations of heat and cold; but, in all the rest, the preternatural heat of the skin was constant, and the patient's feelings uniformly hot and oppressive. The symptom of which they all most violently complained, was the excruciating head-ach.

I shall not trouble you with the observations I made respecting the causes of this fever, or the different remedies I employed, but confine myself to an account of the cold affusion. My opinion of its efficacy was previously fixed, from the perusal of Dr. Currie's valuable Reports, and from some striking cases which I had seen in the Edinburgh Infirmary, under the care of Dr. Gregory. I had the happiness to find that Mr. Wells, then Surgeon to the Regiment, entertained a favourable opinion of this practice, and that we had an opportunity of accommodating a great proportion of the patients in a regimental hospital under our own care. I presaged the happiest consequences from it among the men; and seized with avidity the opportunity offered, not of confirming my own belief in its advantages, but of observing such facts as might further elucidate the subject, and afford additional evidence, to convince my medical friends of the high utility of this practice.

In the mode of application, I observed the rules laid down by Dr. Currie, together with such precautions as appeared a priori to be dictated by reason. The patients to whom it was applied, were those whose skin was uniformly hotter than natural, and parched. I never used it where there was much perspiration; but, on the authority of Dr. Currie, I considered a slight moisture of the skin as forming no objection to its use. While the patient laboured in this state under tormenting head-ach, and every symptom of violent fever, I took him out of bed, stripped him quite naked, * and desiring him to hold back his head, and shut his eyes and mouth, poured a quantity of pump water first over the head, then over the breast and back, then washed the arms and palms of the hands, the thighs, legs, and soles of the feet; when the extremities, formerly hot, now

* When I had occa ion to apply it to females, their delicacy was saved by allowing them to retain their shift, which was changed immediately after the operation.

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now became cooler. The heat generally returned about the region of the heart; while, in the head, it continued during the first affusion with little abatement. I therefore again washed the head and breast, and so on alternately, till the whole surface became much cooler than before. After this the patient was laid in bed. If in the course of eight or ten minutes, the heat returned with equal or nearly equal intensity, he was taken out, and the operation repeated. The head-ach being the most obstinate symptom, and the last to yield to the cold affusion, the head was ordered to be shaved, and kept constantly cool, with a fold of linen laid lightly on, and dipped in water or brandy. Next day, whatever comparative relief the patient might experience, if any considerable febrile heat remained, the operation was repeated. In this application, I conceive it to be of great importance to begin with the head. The head-ach is attended with an external heat much greater in the head than over the rest of the body, indicating a peculiar force of increased action in that part of the system. To begin therefore with cooling the head, tends to restore uniformity of action through the system. The same circumstance renders it necessary to keep the head cool during the whole course of the disease.

The effect of the cold affusion thus applied was an immediate relief from the head-ach, from the heat of the skin, and all the symptoms of pyrexia. In every case the rapidity of the pulse was diminished, and the patient always felt immediate comfort. In many cases, after ten minutes a gentle perspiration broke out over the body, which still further promoted the cure. Next day, if the febrile symptoms returned, they were always milder, and a second application of the remedy greatly diminished them. The head-ach continued for some time after the other symptoms went off, but by the perpetual use of cooling applications it gradually declined, (seldom requiring the application of a blister) and left the patient with no vestige of fever, except a degree of debility. In most cases a yellow suffusion appeared over the surface in the latter stages of the disease, but it gradually went off and seemed to require no peculiarity of treatment. As medical men, in adopting a new remedy, are often too zealous for its indiscriminate use, and those authors who treat on the subject might be suspected of overlooking some of the occasional bad consequences of their practice, I made it my business to attend to the varieties of the phenomena, and to observe whether or not, in any case, this application

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was ineffectual or seemed hazardous; but I could find no instance of this kind. Those patients who had previously a slight moisture on the skin were benefited as well as those whose skin was parched. Some shuddered and started when the water was applied, but this unpleasant sensation was very momentary, though I confess, in observing this, I would use the precaution of applying the water rather more gradually, lest an excessive shock should overpower the system in this state of febrile sensibility. The only patient in the regiment to whom the fever proved fatal, was an officer, whose obstinate disposition resisted the application of every powerful remedy, and in whom indeed the disease assumed a different type from his being subject to a constitutional gloominess of mind, increased at that time by misfortune. I attribute the general efficacy of the cold affusion on this occasion in a great measure to its early application.

A similar fever was very prevalent among the natives of the island, but still more so among the British troops, where it broke out in each regiment at a different time. From any information I could collect, the cold affusion seemed to be unknown to the physicians of the island, nor could I even find any instance in which it was employed in our military hospitals. Some of my friends advised me against its use from the unpleasant speculations to which its novelty might give rise. One gentleman, whom I in vain endeavoured to prevail on to employ it, told me afterwards that he had, notwithstanding, kept the heads of his patients cool in the same manner as I had done, and found it invariably serviceable for alleviating the head-ach. In many patients in the island the fever was attended with high delirium on the second or third day. None on whom the cold affusion was used had any delirium worthy of notice. Some of them complained of giddiness in the erect posture, and their minds were observed to waver a little during the night. From this I concluded that a strong tendency to delirium had existed, but was checked by the same remedy which removed the other symptoms. In many the fever was evidently cut short at once, and in all of them I had reason to think that its course was rendered much milder. The emaciation which appeared among the convalescents was not to be compared to that which generally takes place in fevers so violent. The disease, under this treatment, proved much less formidable than in the ships in the harbour, and in other regiments on

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on shore, where its fatality in some instances spread no small consternation.

Knowing the present spirit of enterprise which prevails in the medical world, I expected on my return to this country in 1802, that the cold affusion must be universally employed, and was rather mortified to find, that though no facts were brought forward to its discredit, many medical men seemed very unwilling to employ it. It is rather singular that while new articles, formerly reputed poisonous, are daily introduced into the Materia Medica, and experiments are made with them not only without scruple, but with zeal, the affusion of cold water in fever, a practice frequent among the ancients, and employed with advantage by some rude nations of modern times, should be considered as too extraordinary in its nature to receive a trial.

Some medical gentlemen complain of the prejudices of mankind as insurmountable obstacles to this practice. But do they not promote such prejudices by their mode of proceeding? They first *declare ingenuously* to the connections of the patient, that they wish to employ a remedy entirely new, a remedy which has the appearance of harshness, but on the beneficial effects of which they have considerable reliance. A preamble of this kind creates prejudices where they did not exist. The affectionate relatives are seized with the same horror as if a surgical operation on the liver or the spleen were proposed. No assurances of its safety will now prevail on them to comply with a practice, the mention of which is forced with qualms from the medical attendant, and that only in a case of extreme necessity. If it were attended with hazard, this procedure would be proper; but its apparent harshness, which arises solely from its novelty, is a very trivial objection to a practice, of the utility of which we are ourselves fully satisfied. It ought not to be mentioned, unless it occurs to the persons concerned. I see nothing to hinder any practitioner from ordering a vessel of water to the bed-side of his patient, and proceeding with the affusion without any previous ceremony. Allowing prejudices to exist, their reign will be very short. The comfort immediately experienced by the patient will quickly dissipate their uneasiness.

In the medical practice of the army, the humour of the patient is seldom consulted. But if prejudices so strong had existed, I think I should have observed them; and this I never have done. When requested on a few occasions to visit patients in private life, I have found, on mentioning

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ing the cold affusion, that instead of dreading it for its harshness, they were inclined to despise it for its simplicity. I recollect an aged woman under a fever in Minorca, whose daughter I prevailed on to employ it, only after prescribing as a placebo that the water should be mixed with some other ingredients. The vulgar are accustomed to place their chief reliance on drugs, of the virtues of which they are ignorant, and to overlook the effects of regimen and of temperature. Novelties in these articles do not make a forcible impression on them. But when such novelties are proposed to the physician, whose views are more extended, they appear to him in all their real importance, as changes which are not to be adopted but on the most solid foundation; and when he is at last convinced of their utility, he feels that his sentiments have undergone a serious revolution. But he should recollect how different the mode of thinking is among men at large; and that by treating other people as if their minds were affected in the same manner as his own, he may give origin to scruples which will be much less easily removed than those of an enlightened man.

It gives me very great pleasure to find from one of your late Numbers, that the cold affusion begins to be used with success in the yellow fever of North America. Where this formidable disease is attended with increased heat, all the advantages of this practice may be rationally expected. In other forms of the disease, we may probably be allowed to entertain great hopes from the employment of water of different temperatures adapted to the state of the skin, or from a judicious alternation of the hot with the cold bath. These subjects begin to be cultivated with zeal and with considerable prospect of success by professional men. In forming our practical conclusions, we must however exercise that patience and caution which subjects at once so important and so delicate of investigation demand.

I am, &c.

HENRY DEWAR.

Edinburgh, Nov. 14, 1803.

To

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE following Cases of Scarlatina, in which cold and tepid ablution were tried with unequivocal efficacy and success, occurred in the practice of the Finsbury Dispensary, under the care of myself and that of my friend and then assistant, Dr. Murray, now of Knaresborough. — I have been prevented by a propensity to procrastination, from before offering them to your acceptance, of which, it is hoped, they may not be deemed altogether unworthy.

I am, &c.

Southampton Row,
Nov. 21, 1803.

J. REID.

Charles Haywood, ætat. eight years, on May 24, 1803, was attacked with severe pain of head, accompanied by shiverings and general uneasiness. On the following day he was visited by us; his head-ach and febrile anxiety had greatly augmented; he complained of soreness in his throat; and upon inspection, the tonsils were found to be much inflamed, and of a deep red colour. His face, breast, and legs had assumed a bright red colour, from an eruption which had broken out that morning. He had lost his appetite. Tongue foul, but moist; eyes dull and heavy; body open; pulse quick, small, but regular; spirits little affected; skin hot and dry. He was ordered to take one table spoonful of a solution of two grains of tartar emetic in four ounces of water, and this to be repeated every half hour until full vomiting should take place; and it was directed that his whole body should be washed with tepid water, and afterwards carefully dried. This was repeated thrice a day.

28. The affection of throat continuing very severe, a blister was yesterday applied to the nape of his neck, and he frequently gargled with sage tea and vitriolic acid. He was washed as directed, and expressed much satisfaction after it, feeling himself less uneasy than he previously had been; in particular, after the first and third washings he fell into a fine calm sleep. Pulse less frequent and of better strength; throat still painful, but not so much inflamed; skin cool and relaxed; bad head-ach; eruption scaling off; appetite began to improve, and he was ordered to take porter.

30th.

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30th. Washing had been continued till this day, when it was left off, a further perseverance in it being deemed unnecessary, the febrile symptoms having left him. Throat almost well, redness of skin having disappeared; a desquamation of the cuticle, as usually happens, succeeded; appetite good, skin cool, pulse 80, and regular; body regular. Being very feeble, the mist. Peruv. acidul. of the Dispensary was ordered to the extent of a table spoonful three times in the course of the day. This mixture consists of half an ounce of the bark and half a drachm of sulphuric acid to half a pound of water.

Jane Haywood, æt. 22, on the 30th of May was seized with pain of head, nausea, shivering, and soreness of throat. These complaints became worse on the following day, and a bright red eruption came out on her body. She took gr. 15 of ipecacuanha, which operated fully, and had a blister to the nape of her neck.

June 3. Throat much inflamed, but not swelled; pulse 100, small and quick; skin hot, dry, and tense; eruption perfectly diffused, without any distinct spots; she appeared to be extremely feeble and low; tongue very foul, but moist; body regular. She took two table spoons full of the solution of tartar emetic, and vomited gently. She was washed with tepid water, in the same manner as was directed for the first mentioned patient, who is her brother, and felt very comfortable (as she expressed it) after each sponging. She had few bed clothes on her, and her chamber was kept well aired. She used the same gargle as her brother did, but would hardly take any nourishment, and in particular, strenuously refused wine and porter.

5. The washing was still continued three times in the day; and from being uneasy and very hot, she became cool and less irritable after the sponging; the inflammation of her throat was also much relieved; pulse 80, regular, but small. Her appetite began to return this day, and she ate pudding and a boiled egg with great relish. She was directed to take two table spoons full of the mist. Peruv. and on the next day found herself so much better as to come to the Dispensary, a distance of half a mile from where she resided. Fortunately no bad consequence followed this act of imprudence, and she recovered strength with rapidity.

Mary Haywood, æt. 20, was attacked with all the usual symptoms on May 12, about a fortnight previous to the illness

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illness of her sister Jane. The eruption appeared on the fourth day of the disease, and had disappeared on the 18th of May, when we first saw her. She was then in a considerable stupor, had great dyspnœa, and seemed to have lost the power of swallowing from the passage being loaded with phlegm. Mouth and tongue extremely foul; lips black; pulse very frequent, but so feeble as not to be exactly numbered; skin burning hot, and very dry; body open; face pale, and shrunk; rattling of the mucous in her throat; the torpor was, at times, interrupted by violent fits of delirium. A large blister was immediately applied to the nape of the neck, which having begun to rise about three o'clock next morning, two table spoons full of the solution of tartar emetic were poured down her throat, and produced moderate vomiting. Her face, neck, and feet were likewise twice sponged with tepid water.

19. She began to recover perception, power of moving, and swallowing, soon after the blister had taken effect. Mouth and tongue much cleaner; pulse small, and 100, but much stronger and more regular than at the first visit; skin cooler. The washing was repeated; and a tendency to the torpor having recurred, her feet were immersed in warm water for nearly an hour.

James Haywood, ætat. 18, after the usual symptoms of fever and sore throat, had the eruption appear on his body on May 30, being the third day of his illness. He took an emetic of fifteen grains of ipecacuanha, and had a blister to the back part of his neck, which having risen extremely well, gave great relief to the affection of the throat. He was twice a day washed with tepid water.

June 3. Although this was the seventh day of the disease, and the eruption had disappeared, yet as his skin was very hot and arid, and his pulse remarkably full and strong, and very frequent, he was this day thrice washed with cold water. His throat being quite free from inflammation, no further remedies were thought necessary.

5. He was washed three times yesterday with cold water, and felt himself much relieved; his pain of head was removed; his skin became moderately relaxed and cool; pulse 80, and of good strength. He was dismissed convalescent.

Mary Norris, ætat. 9, was taken ill on July 29th, 1802. The day of the appearance of the scarlet eruption could not be learnt, but it was completely out on Aug. 2, (fifth day

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day of the fever). Her throat was much inflamed, and somewhat swelled; pulse quick and feeble; body open; skin hot and dry. She took two table spoons full of the solution of tartarised antimony, which operated to full vomiting; she had a blister to the nape of her neck, and gargled with sage tea and acid. She was washed with cold water, was kept perfectly cool, and allowed to remain but very little in bed during the day.

4. She also felt more comfortable after each washing. Her skin was relaxed, and of natural heat; pulse still quick, and about 80, but of much better strength. Washing, of course, was discontinued; nor did she require any other remedies.

Two of her brothers were also affected with scarlet fever, which run a course very similar to that of her's; and as they were treated precisely in the same manner, and washed with cold water, it was deemed to be superfluous to give a longer account of their cases.

John Blackwell, ætat. 15, was first seen on August 18, being the sixth day since the commencement of his disorder. His skin had assumed a dark red colour, from an eruption that had come out on the third day of the fever, and which, as usual, was entirely diffused, without any distinct, separate pimples. Throat much inflamed, and swelled; tongue white, and parched; skin hot; pulse very quick, and rather strong. He had an emetic given him early in the disease. He was directed to be washed with cold water, and had a blister applied to the nape of his neck. He gargled often with the common gargle.

20. Was washed eight times. The eruption had disappeared. Pulse 74, and of natural strength; appetite much improved; heat of skin, and general sense of uneasiness, removed; pain of head and soreness of throat gone; appetite beginning to improve; body open. No other medicines employed.

His sister, aged 18, also had scarlatina, and was visited on the second day of the fever. She was washed with cold water; but having a very trifling cynanche, no other remedies were administered, except an emetic. She was free from febrile symptoms on the third day.

Sarah Callad, ætat. 16, was admitted a patient on Sept. 17th, being the seventh day since her attack. Affection of throat very severe; considerable eruption remaining on her body; great febrile anxiety; nausea; sickness; pain of

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of head; skin hot and tense; pulse small, frequent, and irregular. She had a blister to her neck and gargled frequently, which afforded relief to her throat. She was washed repeatedly with tepid water, and the fever left her on the 19th; but as she continued very weak, she took the bark mixture.

Richard Webb, ætat. nineteen, on September 18, was attacked with shiverings, head-ach and slight nausea, followed on the next day by soreness of throat and difficulty in swallowing.

21. The eruption appeared mostly on his breast. He was first seen on the 22d, when his pulse was quick and small, skin hot, thirst very urgent, body regular, appetite lost; throat much swelled; and was treated in the usual way. He was washed with cold water; had nourishing diet and wine and water; he likewise took fifteen grains of ipecacuanha.

24. He was almost free from fever; scarlet eruption had disappeared. The convalescence of this patient was tedious, and he had a swelling of the sub maxillary glands which proved very troublesome.

John Oxden, aged four years, on October 13, was seized with pain of head, shivering, sickness, and soreness of throat, succeeded on the third day by a bright red eruption on his breast and belly.

October 15. Throat much inflamed and swelled, intense pain of head, skin very hot and dry, pulse quick and small, but regular; body open. He was ordered to be washed with cold water, and kept very cool, with few bed-clothes, and the window of his room constantly open. He took ten grains of ipecacuanha without effect; and to gargle as usual.

18. Owing to the very blameable prejudice of his mother he was not washed, although most particularly directed; he was likewise oppressed by the weight of his bed-clothes; and the window of the chamber in which he lay, was kept open only at intervals during the day. His pulse was extremely feeble and irregular; eruption as before; pain of head very severe; throat very painful, and much swelled; mouth and tongue exceedingly foul. He was delirious the preceding night, and refuses to take any medicine or drink. He frequently screams violently, and at other times lay in an imperfect torpor; two tea-spoons full of the solution of emetic tartar were poured down his

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throat; this was again repeated, when it produced slight vomiting; but he could not be made to swallow more either of this or diluted sulphuric acid. A blister was put to the nape of his neck, and he was once washed with tepid water; but all in vain, for he died early next morning. The eruption, after death, passed most rapidly into gangrene.

Frances Game, ætat. nine, was first admitted as a patient on November 15, being the eleventh day of the fever. Eruption very trifling, and disappearing at intervals; excessive pain of head, with considerable soreness of her throat and mouth; and upon inspection, the inflammation of the tonsils was perceived to have spread to the internal fauces. Tongue red and foul. The inflammatory affection was removed by the use of remedies similar to those employed in the before mentioned patients. Her body was washed with warm water.

17. The fever had abated; her pulse was soft and of good strength, heat natural; but the general anxieties and the head-ach still continued. She was very feeble and had a very bad appetite. The washing was continued, and she began to take the Peruvian bark.

19. She was free from fever; but the pain of head still being very troublesome, blisters were applied to her temples, with the best effect.

Continuing to take the bark, she improved in strength and appetite, although slowly.

John Crick, ætat. 10. In this patient the usual symptoms were succeeded by the eruption on the fourth day, which hardly remained visible for two days. He was visited on December 22, the sixth day of his disorder, and no traces of the eruption could then be discerned. He was extremely low in spirits, and had a dread of death truly extraordinary in so young a person. He was very feeble, and could scarcely be kept the an erect posture without fainting; his skin was somewhat hot and dry; pulse very small and 90; tonsils of the throat of a florid colour, and rather swelled; appetite bad. A blister was applied to his neck, and afforded him much relief; he took a spoonful of emetic tartar, which operated mildly. His body was washed with tepid water twice in the course of the day; he drank ed wine.

23. He was free from fever, but was left in a weak con- tion, and the fear of death still kept possession of his mind;

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mind; skin cool and moist; pulse 88, and regular; he had very disturbed and uneasy sleep. He now took the bark and red wine and water freely. His convalescence was tedious, but was not attended with any dropsical swellings.

His sister, 13 years old, caught scarlatina, and was washed likewise with warm water. Her recovery was rapid.

John Vaughan, ætat. 14, was first admitted as a Dispensary patient on January 21, 1803, having been ill for seven or eight days. He had taken two emetics; and, on the sixth day of the fever, had a blister to the nape of his neck. When we first saw him his thighs and legs were of a bright red colour; his pulse was very quick, irregular, and so feeble as not to be accurately numbered, it was 130 at least; skin hot and tense; tonsils of a deep red colour, and had several sloughs; great prostration of strength, and sense of general pain; tongue more red than natural, and dry; no appetite; body open. He was exceedingly deformed in person, and diminutive in size. His body was washed with tepid water; he used a gargle composed of half an ounce of myrrh, thirty drops of muriatic acid, and half a pound of water. He was ordered to take red wine freely, and to have two table spoons full of the acidulated bark mixture twice a day.

24. Fever nearly gone; scarlet eruption still visible; throat much relieved; he found himself easier; glowed considerably after the washings.

26. He was free from febrile symptoms, but remained very weak; however, in a day or two, his appetite returned, and he regained strength with rapidity.

Richard Vaughan, ætat. 11, having caught the scarlet fever from his brother, was visited on Jan. 28, the second or third day of his complaint. The eruption was copious, and of a very bright colour; pulse very quick and small; skin burning hot; tongue white, and dry; affection of throat very mild; an excessive sense of general uneasiness; sleeps very badly from his extreme irritability. He immediately took two spoons full of the antimonial solution, which occasioned full vomiting. He was washed with cold water, and had a pill of opium at bed time.

29. He washed twice, and found considerable relief from it. Heat natural; febrile anxiety diminished; eruption lessened in extent; bad sleep. He was ordered to take porter, and the washing was repeated.

31. The fever having completely left him, and his sleep

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and appetite having returned, he was considered as not requiring any further medical aid.

Observations.

1. A peculiar recommendation of the above mode of treatment is, the rare occurrence of dropsical affections after the disease when thus managed, which in persons treated in the old method, so frequently supervene, and prove so very troublesome, and often dangerous.

2. In people of a scrophulous habit, swellings of the glands very often follow scarlet fever; but where the washing has been seasonably and vigorously employed, these seldom take place, even in persons having the *marks* which denote a scrophulous taint. In general, where the eruption is extensive, the sore throat is trifling, and vice versa.

3. The case of John Vaughan admirably illustrates the utility of washing, since two emetics and blisters had been previously tried with no benefit; but the disease yielded considerably after the two first washings, and was removed after this plan had been persevered in for two days longer.

4. It ought to be kept in mind, that in an early stage of the disease, when the strength is not as yet much reduced, when the skin is hot and dry, and where the febrile anxiety is considerable, *cold* washing is decidedly indicated. But, when extreme debility has come on, after the fever has continued for several days, when the pulse is small and irregular, the skin is more relaxed, then the re-action produced by cold washing might prove too violent, and, of course, in such cases, *tepid* sponging is preferable.

Some Remarks *on the* Extirpatio Uteri, *as perhaps the only method of operating for the* Cancer Uteri, *by Dr.* Ch. Struve.

[With an Engraving.]

THE cancer uteri is one of the most dreadful diseases to which the female sex is exposed, and which is generally thought to frustrate the assistance of the healing art so much, that no other consolation can be given to the patient, but what religion affords her, and the hope of death, to put an end to the most insupportable pains with which the disease is attended. However, we find some remedies proposed against this disorder, and even instances are recorded of patients being cured by the internal use of

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different remedies; but whatever credit such cases may claim, I have not been so fortunate in my own practice; and in three cases of cancer uteri, that fell under my observation, I have been entirely disappointed in my hopes of cure by all possible remedies, rational as well as empirical. From this melancholy experience I was led to think, whether no help could be afforded from the operative surgery, in a disease where medical assistance is never crowned with success. The extirpation of the cancerous mammæ, so frequently executed with success, guided my ideas on the analogical extirpation of the uterus, an organ which is known to be in close connexion with the mammæ, that such an analogical conclusion might be excusable, even if our experience did not inform us of the possibility of such an operation. Not only in old but also in modern writers, we find cases of this operation noticed, of which, particularly, I shall only mention a case described by Professor WRISBERG, (Commentatio de uteri mox post partum naturalem resectione non lethale, &c. Gottingæ, 1787), in which the uterus was cut off by a rude ignorant midwife, who took the prolapsus uteri for a preternatural excrescence. The wound was afterwards healed with only the assistance of nature; and the person, whom I myself had an opportunity of examining twenty years after that accident, enjoyed tolerably good health. This case, however, seems to prove how little danger this operation is attended with, which I think could be safely undertaken, in case no adhesions of the diseased uterus to the neighbouring parts take place, which some physicians think to be always the case in cancer uteri, but which, however, is discredited by others.

The operation cannot be performed unless a prolapsus uteri is previously occasioned; and if it should not exist together with the cancer, as I have found it in one case, I think it a very essential point of the operation, to produce it by art, which is generally done without much difficulty, as the ligaments of the uterus are in most cases very much relaxed. But to make this operation more easy, I should advise to prepare the uterus, during some weeks, by emollient injections with opium; and the parts being thus sufficiently relaxed, the attempt must be made for making a prolapsus uteri, as the first step in the whole operation. For this purpose I recommend the instrument A. *(see the plate)* which is made of good steel and *one* foot long; the branches are round and well polished, being shut in the manner of a pair of midwifery forceps; the upper

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end of each branch is provided with a knob surrounded with soft pads of leather; the handle is like that of a pair of scissars; the upper part is gently curved outwards, so as to leave a space of about one inch and a quarter, when the handle is shut.

In order to produce the prolapsus, the patient should be placed on a table covered with beds, so as to rest on the knees and the elbows, and the thighs must be drawn from one another to be able to introduce the instrument, which the operator is to do in the same way as when he brings a forceps through the orifice of the uterus. The instrument being shut, he is to put the two indices into the ring *x*. depressing the thumbs towards *u*, and the middle fingers to *o*, and thus to keep the instrument shut. The operator is to make every day about twenty tractions, injecting from time to time an emollient decoction with opium, till he has gradually drawn down the uterus, while he endeavours to keep the vagina in its proper situation. When the prolapsus is in this manner effected, I recommend the curved knife B, to separate with a circular cut the vaginal portion and the neck of the uterus. The rest of the uterus should now be gradually drawn out with a pair of pincers, to tie the vessels of the vagina, and the remaining portion must be kept outwards, partly for preventing any blood getting into the abdomen, partly for applying the dressing proper for healing the wound.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IN reading your Medical and Physical Journal, No. 55, I noticed Mr. Smith's sketch of an extraordinary thick cranium; and having lately had a patient with a fractured scull, (*see plate*) where the bone was as remarkably thin, and the case altogether not a very common one, I beg leave to present you with it for publication. I have also enclosed the bones, joined together with wire.

Bradford, Wilts,
Oct. 9, 1803.

I am, &c.

W. F. ADYE.

WM. CROMWELL, aged 17, a pauper of this parish, on the 1st of August last, received a blow from the end of a trap-stick.

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trap-stick, upon the os frontis, about two inches above the orbit of the left eye, which produced a fracture, with considerable depression.

The next morning the trephine was applied upon the superior part of the sound bone, and five depressed pieces of remarkably thin bone, (including a large portion of the orbit) were removed; a considerable hæmorrhagy attended the operation, proceeding from a wound of the brain, immediately under the most depressed part; this however subsided after a short time, by moderate pressure.

On the fourth day a fungus arose from the brain, increasing to the size of a large watch in the course of six days, having an opening in the middle, from whence brain was regularly discharged for nearly a week. Various astringents having been employed for some time, with very little effect, recourse was had to strong pressure, which gradually removed it, without producing any alarming symptoms.

During the first six weeks, the patient was unable to open his left eye without shutting the right; but is now recovered in every respect.—The wound was quite healed, and the boy returned to his usual occupation, (that of a weaver) the first week in October.

CASES OF COMPOUND FRACTURE; *communicated by* Mr. S. FISHER, *Senior Surgeon to the Salisbury Infirmary.*

JAMES ALLEN, aged twelve years, was admitted into the Salisbury Infirmary on July 12, with a compound fracture of the thigh and with considerable laceration. He had been attended by a surgeon in the neighbourhood, who had merely made an extension of the limb without examining the state of the fracture, or attempting to remove any splinters which might reasonably be expected to exist, as the accident was occasioned by a loaded waggon going over the limb. The irritation excited by the splintered bone occasioned such violent contractions of the muscles, that when the surgeon came every day to examine the limb he found it so much shortened, that he made fresh extensions daily. After being kept for two months in this state without any amendment, and his health visibly declining, he was sent to the Infirmary, (a distance of sixteen miles) in a common cart with only a pillow tied round the

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thigh. When he was admitted, I thought it most prudent to give him a few days to recover from the fatigue of the journey, and endeavoured to amend his health before any operation was attempted. About a week after, when he was somewhat recovered, I desired Mr. Wyche (who was my colleague at that time) to see him with me, that we might consult on what could be done. On the first appearance we were fearful that nothing less than amputation could give him any chance; but there were considerable objections to the operation, as the fracture was so high up that it was impossible to apply a tourniquet. On examining the limb, we found there was a large collection of matter which lay very deep, and the integuments very much thickened, the knee almost anchylosed, and the leg œdematous. I then determined to make a very free incision, beginning very high up, to ascertain the state of the fracture; on making the incision there was a very copious and fetid discharge with some pus, (upwards of a pint in quantity). On examining carefully with my finger, I found two large splinters entirely detached from the bone; these I removed with the forceps, and on measuring them, one proved to be two inches in length, the other three inches; I then found the inferior portion of the bone very jagged, and riding considerably over the superior portion, and that no extension made any alteration in it. I then continued my incision almost to the knee; and having freed the inferior portion of the bone from its muscular attachments, I removed a considerable portion of it (three inches in length) with a metacarpal saw. I dressed the parts with lint dipped in decoction of bark with a small proportion of tincture of myrrh in it, and applied the eighteen-tailed bandage. In a very few days the wound assumed a healthy appearance and the discharge lessened. He took the bark freely, and opiates occasionally, and went on very well for a fortnight, when he became feverish and restless. On examination I found a tumour just under the knee, which I immediately opened, and let out near a pint of fetid matter; I applied the bandage as tight as I could, beginning at the upper part, leaving the inferior wound open. The discharge ceased in a few days, and the wound healed gradually. He is perfectly well and can walk with the help of crutches, and has for these six weeks past.

Besides the above, I have had two other cases of compound fracture of the tibia, attended with considerable laceration; in both of which I was obliged to remove a portion of bone, (the one a man about thirty years of age) in which

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which case I took off two inches of the tibia; he is now perfectly recovered, and can walk very well. The other a lad, where I took off about an inch and a half; he is in a fair way of doing well, but has had several splinters come away since. My reason for troubling you with this, is to prove what great exertions Nature is capable of making when properly assisted; and to warn practitioners in general not to be too precipitate in removing a limb, as that is a loss not to be repaired, more particularly as these accidents most frequently happen to those who are obliged to earn their bread by their labour, to whom such a loss must be of the most serious consequence.

December 7, 1803.

To the Editors of the Medical and Physical Journal

GENTLEMEN,

THE following extract of a letter from Dr. Marshall, dated Lymington, 6 Dec. 1803, fully confirms an opinion which I advanced in the last Number of your Publication; and, from the importance of the subject to which it relates, I flatter myself you will insert it the first opportunity.

"Since my arrival here, I have been busy with the Cow-pox, having inoculated upwards of five hundred, principally of the poor, who have not had the Small-pox amongst them for the last twelve years.

"In this month's Medical Journal, I observe a letter from Mr. Weston, of Jamaica, to you, is inserted; in which he says, he is 'obliged to acknowledge the lamentable fact, that in a temperature of 90, the vaccine matter loses its activity.'

"This, to me, appears a very extraordinary acknowledgment; for during the time that I was at Gibraltar, in August 1800, the temperature was never so low as 90, and frequently 96; during which time I never observed any particular difficulty in communicating infection more than in England; nor can I conceive any probable cause for its failure in Jamaica.

"Mr. Weston also says, he has 'ascertained, beyond cavil, that the negro habit is susceptible of the disease." Upon this point I should have supposed there could not

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be two opinions. One of the first persons vaccinated on board the Endymion, in 1800, with matter furnished by you, was a negro; and his arm furnished the virus for our future inoculations.

"From my original memorandum, now before me, I find your observation upon the rapid progress of the disease in Negroes just; since the arm of this man yielded matter for inoculation on the third day.

"I am well convinced, that if proper precautions be taken, vaccine virus will not become effete in any climate. At Palermo, I used matter taken in Malta eighteen days before, with perfect success. The same matter, used at Naples three months after, still retained its virtue, though the temperature was frequently upwards of 100.

"Virus taken upon ivory or quill, wrapped in paper, and kept in a drawer, is, I believe, capable of being preserved as long as can be necessary in any climate."

To this valuable communication from Dr. Marshall, I beg leave to subjoin a few miscellaneous observations.

In my Treatise on the Cow-pox, p. 799, I stated, that Dr. Jenner had been requested by the Physicians and Surgeons who had presented him with a gold medal, to sit for his picture to Northcote. This was a mistake. It was the Medical Society of Plymouth, consisting exclusively of the resident physicians of Plymouth, Dock, and Storehouse, who gave this additional testimony of the high esteem in which they hold the discovery of Dr. Jenner.

The last, but not the least honour conferred on Dr. Jenner, is a Latin Ode on the subject of Vaccination, written by the celebrated Anstey, author of the New Bath Guide, and other excellent poems.

I have lately met with a case, which is, perhaps, unparalleled in the annals of inoculation; in which the sign of infection did not appear till the forty-sixth day. A very small, but genuine, vaccine vesicle then took place. The child has since been inoculated repeatedly with the most active matter, but to no purpose.

The subject in whom this remarkable circumstance occurred, is a child of Mr. Dust, a gun-maker, at Chelsea. There is reason to believe, that the effect of the vaccine virus was retarded by the counter-stimulus of a very large tetter on the shoulder of the opposite arm. This tetter was above three inches and a half in length, one inch and a half in breadth, and of long standing.

About

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About a week after the insertion of vaccine virus, the letter was more inflamed; but from that time it began to mend, and in a few weeks totally disappeared.

New Street, Hanover Square,
December 14, 1803.

I am, &c.
JOHN RING.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE vast utility of the Vaccine Inoculation, its safety and efficacy, are now so established, that I should not have solicited a space in your excellent Miscellany of next month for these few lines, had either my reading or other information furnished me with a fact similar to the subject of the subsequent remarks.

On September 16, I was sent for to visit the wife of N. Obey, of Rushmere, near this town. She had then sickened five days of the natural small-pox. She nursed at her breast a strong, florid child, seven months old. The pustules on the mother being numerous, I entertained some apprehensions for the safety of her offspring, both from its habit and age. I explained instantly to the parents the great probable advantage of vaccine inoculation, founded on the hope that the infant was not yet infected with the small-pox. Parental affection was soon persuaded to listen to a voice that promised deliverance from the threatened evil, and I was permited to pursue the plan I thought advisable for the infant's safety. Having luckily in my pocket some cow-pock matter, I inoculated both arms with it. On the fourth day I had the satisfaction to observe both arms had taken the infection. On the eighth day the efflorescence was complete, and the child apparently free from indisposition, having experienced no other inconvenience than very slight fever and trifling pain in the axilla.

During the whole time the child continued to suck, and to be sensible of little suffering or uneasiness from its complaint. On the ninth day, when the mother was still ill of the small-pox, the infant was perfectly well.

Ipswich,
October 12, 1803.

I am, &c.
JOHN MORGAN, Surgeon.

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To Dr. BATTY.

DEAR SIR,

THE enclosed Case has been sent to me by a very sensible practitioner in the country, Mr. Blagden, surgeon, of Petworth, who wishes that it may be communicated to the public. It occurs, I believe, very rarely, is described with singular perspicuity, and I trust that you will think it not unworthy of a place in the Medical Journal.

Grosvenor Street,
Dec. 5, 1803.

I am, &c.

M. BAILLIE.

ON the 28th of August last, I attended the wife of a reputable person in this neighbourhood, in her second labor. The first, which happened four years before, was, from the smallness of the inferior aperture of the pelvis, an extremely laborious one; the present was less so, though the last five or six pains were unusually violent: however, the labor was in no other respect uncommon, except that the patient spoke of a greater degree of suffering not only during but also between those pains in the right, than in the left side of the uterus, although, in the last months of utero-gestation, the abdomen had been more full on the left than on the right side. The placenta was expelled with ease.

After waiting the usual time I returned home, about one in the morning; but was called again, in haste, in less than half an hour. The patient was laboring under violent and unceasing bearing-down pain, and strongly impressed with the idea that she had another child. On examination, I found a monstrous swelling of the right labium, extending itself to the perinæum. I endeavoured, by fomentations and the repeated use of opiates, to give the poor woman some ease, but without the smallest success; the size of the tumour increased till it equalled a child's head, and the pain likewise increased till it exceeded every degree of it which I had before witnessed, and might be truly called torture.

In less than three hours from the commencement of this affection, the tumour began to grow discoloured, and within another hour the most prominent part of it assumed a livid hue. After reflecting with all the coolness of which so unusual and alarming a situation admitted, it occurred to me that the cause of all this distress could be no other than

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than extravasated blood from some vessel or vessels which had given way, and that, by making a free opening, I should stand some chance of diminishing my patient's sufferings, and, possibly, of putting a stop to the mischief, which was every hour growing more extensive and threatening. Impressed with this idea, I proposed the operation, to which she readily assented, and, soon after five in the morning, I made a longitudinal incision with a lancet, nearly five inches in extent, in the most prominent part of the tumour. On passing a finger between the edges of the incision, a good deal of coagulated blood was perceived, which was broken down and extracted; immediately after which there rushed out a pretty large quantity in a fluid state; this stream, however, was not considerable enough to occasion faintness, and, indeed, very soon became trifling. As soon as the opening was made, the patient expressed a sense of relief, and, in about fifteen minutes, fell into a dose; she continued, with some intermissions, in a dosing state till about half past nine, when the tumour was much diminished, particularly at its upper part. At 2 P. M. the tumour was still less, the patient tolerably easy, and able to bear her legs closed.

The discolouration of the loose cellular membrane had now exactly the appearance of ecchymosis from contusion.

The use of the common fomentation was directed every six hours, the unguentum ceræ, spread on lint, and a bread and milk poultice. Matters went on so well, that on the 3d of September the tumour and pain were inconsiderable; but as there was evidently extravasated blood still within the tumour, and the air of the chamber was grown very offensive, a poultice, made with small beer and fine oatmeal, with the addition of a large spoon full of yeast, was applied, and renewed every three hours. Coagula came away in every poultice, but after four days no more were visible; the edges of the wound had likewise thrown off all their sloughs, and looked clean and healthy; and the air of the chamber had lost its offensiveness. From this time the unguentum ceræ only was made use of as dressing.

A clyster was, at first, administered every day; afterwards every other day. Although the urine had frequently drizzled away, and apparently in large quantities, yet the distension of the bladder became so great on the 1st of September, that it appeared necessary to introduce the catheter, when nearly five pints were drawn off; on the following day a full quart was again drawn off; but, on the third,

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third, she was able to raise herself on her knees, and to pass a fair quantity.

The woman complained of great pain in both legs from the commencement of the tumour, and it gradually went off as the tumour subsided.

The milk-fever was moderate, and every thing relative to the lochial discharge, as well as the breasts, perfectly natural, and in no respect different from what it generally is.

On the sixth day she bore being removed to a couch whilst her bed was made; and, on the twenty-first, the wound was completely healed, and the labium reduced to its natural size and appearance.

OBSERVATIONS ON THE DIGESTIVE POWER OF THE HUMAN STOMACH, *by* J. HELM; *communicated by* Dr. NOEHDEN.

THE author having the care of a woman, 58 years of age, who suffered under a remarkable disease of the stomach, took the opportunity of making several observations on the action of the stomach on different aliments. The subject of his observations had always enjoyed a good state of health, till she was married in her thirty-third year of age, when she was frequently attacked with cholics, vomitings, a redness, a burning and pungent sensation in the region of the stomach, which symptoms generally returned every third week, but were less violent in time of pregnancy. A blister, applied on the painful place, relieved her greatly, and during the space of one year, she found herself free from pain. After this time, she became pregnant, and about the middle of this state, she observed a tumour in the region of the stomach, of the size of a walnut, which had the same colour as the skin, and was painful. After the delivery, those symptoms recurred with greater violence, and were almost insupportable in rainy weather. Appetite good. The tumour began gradually to increase and to become hard till it reached down to the navel, and an anasarca supervened. Thus it remained till the next year, when the tumour being accidentally pressed, broke open, and about a pound of yellow purulent matter issued, when her sufferings diminished, together with the anasarca. The opening was of the size of a small pea, and small particles

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ticles of aliments came forth from it. Mr. H. being sent for about this time, found the patient weak and emaciated; the opening gradually increased, so as to let a finger pass into the stomach; a prolapsus of the opposite side of the stomach supervened, and a catheter could be introduced as far as the pylorus, without either much incommoding the patient, or causing vomition. In this state, the patient remained five years, and during this time the author made the following observations. The food of the patient was extremely simple, wine causing much pain. Some hours after her meal, she had violent pains in the back, reaching thence to the left side, and particularly a burning sensation about the edges of the opening, and she was generally obliged to loosen the bandage, and to let the contents of the stomach issue, while she relieved the pain by drinking milk. When the weather was fine, she had neither hunger nor thirst, and sometimes fasted for about thirty hours. The taking of sour krout or pickled cucumbers, sallad, and sour cherries or apples, gave her the least pain, but any flatulent food she could not keep above an hour in her stomach. In bad weather, she felt a great deal of pain, and the prolapsus increased. Any violent motion would immediately make a good deal of gall run into the stomach, from which it issued through the external opening. Milk coagulated instantly after it came into the stomach, either through the mouth or the opening, which however arrived a little later, when the stomach had been washed with water; asses milk coagulated latest of all. The patient was never obliged to bring out any spittle, nor could she be made to vomit by a mechanical irritation. Stools followed regularly every second or third day; urine was yellowish and cloudy; pulse 80—85 in a minute, and after the taking of spirits, it became 112—120 in a minute, and then the food issued with force out of the opening. A solution of one grain of emetic tartar being brought into the stomach with a syringe, caused much trouble, and a burning sensation, and the peristaltic motion of the stomach could be clearly seen. The pains were relieved by milk; and after three hours, she had four watery stools.

The results of other experiments with aliments and medicines are as follow: White bread of all sorts was more easily digestible than brown or black bread. Peas and lentiles were more digestible than beans. Pears and pine-apples more than apples. Peaches, apricots, plumbs and figs were easily digestible. Chesnuts, nuts, and sweet almonds were almost indigestible, with and without the epidermis.

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epidermis. Turnips and potatoes were very digestible. Sallad and different sorts of cabbages, prepared with vinegar, were easily digestible. All sorts of champignons were difficult to digest. Veal, lamb's flesh, and pork were more easily digestible than beef, mutton, and flesh of a wild boar; not so easily as from a hare or other venison. Chickens, pigeons, &c. were more easy to digest than geese or duck's flesh. The intestines of animals were easy to digest; ham was easily digestible; all sorts of fish were soon digested. Sixty grains of Peruvian bark had lost, after having remained from six to ten hours in the stomach, ten grains; the extracts of bark, cicuta, aconitum, had lost in the same time, twenty grains; gummi guaiacum, limatura martis, and antimonium crudum, from ten to twelve grains. Castoreum, wax, assafœtida, and rusty iron filings remained insoluble; ten grains of camphor, were within six to twenty-four hours, diminshed from four to six grains. Gum arabic was quite dissolved; sixty grains of g. ammoniac. lost often, in ten or twelve hours, from eighteen to twenty grains. The weight of magnesia usta was increased twenty grains in the same time, and shewed no more any effervescence with acids. Flores sulphuris alone were insoluble, but by the addition of a neutral salt they became a little soluble.

On the Functions of the Lungs; *communicated by our Correspondent at Paris.*

A Paper has been read at the Medical Society at Montpelier, which has for its object to prove, that the function of the lungs is not to generate heat nor to carry off heat, as has been supposed, but for the purpose of introducing oxygen. The author, Dr. Thomas, considers the experiments of Godwin sufficiently accurate; and he says, that according to them, the quantity of heat combined with oxygen, taken in by respiration, is too small to account for the temperature of animals; he thinks that we should ascertain well before we determine how this heat, which may be disengaged from the oxygen inspired, is distributed through the body, to be certain that the caloric does not accompany the oxygen into the body. But let us suppose, says the author, that the oxygen does disengage its heat at the moment of fixing in the lungs, what should be the consequence?

1st. Says he, the veinous blood does not contain carbonic

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bonic acid in a state of gas; but he maintains that it does exist in a fixed state; the heat therefore necessary to give this carbon a gacous form, must be taken into the account.

2d. Expiration carries off a quantity of vapour, but he does not admit that this vapour is the result of a combination in the lungs, for besides the difficulty of assigning the source of the hydrogen, there would be a still greater difficulty to account for that of oxygen, which we know to be in the proportion of 85 to 15. He does not speak of the consequences of that great degree of heat which must arise from the combustion of such a quantity of oxygen. He considers the evaporation from the lungs to be in itself more than enough to consume all the heat that could be disengaged from fifteen parts of oxygen; but as well as the heat necessary to carry off the humidity of the lungs, the cold air taken in, absorbs a considerable quantity.

3d. It is impossible to conceive that when we confine 200 cubic inches of atmospheric air, according to the calculation of Godwin, so small a degrec of heat should be develloped; or when we inspire pure oxygen, that the only sensation we perceive is that of a cooling, refreshing feel. And further, observes the author, if chemical effects out of the body can be compared to what takes place within, we may find an analogous circumstance in support of the opinion advanced. Oxygen, says he, brought in contact with blood in a vessel, produces no sensible heat. Analogy would furnish many other reasons if they were admissible in an inquiry of this nature. The author brings many arguments, unnecessary to notice, in order to prove that the lungs are not intended as a refrigerating organ to the system. To determine the use of the lungs two considerations present themselves:

First.—The author thinks that the lungs may be useful in disengaging the blood of carbon; but this principle does not present itself pure in the blood in the lungs, for as there are 11 out of 100 parts of this acid in the air expired, and as carbon in acidifying absorbs twice its weight of oxygen, the inspired oxygen would be insufficient, even supposing that it acted all on the carbon: the same objections hold against carbon being dissolved in hydrogen. The author looks on carbon in the blood to be in an acid state, not in the state of oxyd, as M. Chaussier found that the oxyd of carbon gave a red colour to the blood.

A second effect, less equivocal than the former, is that produced by oxygen on the blood in the lungs; the author mentions

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mentions the many proofs of this fact, which are within the knowledge of most physiologists. The use of the introduction of this principle, he considers to be principally intended for revivifying the actions of the animals. Birds that take long flight, and require great exertion, take into their capacious lungs great stores of air; many insects, whose temperature is low, could not require for the support of their heat so extensive an apparatus as they have.

And lastly, the author observes, that the extent of the lungs in insects will be found to bear a very accurate proportion to the quantity of activity which they enjoy.

The author concludes by the following corrollaries:—

1st. Respiration cannot be assimilated to ordinary combustion, it is a real oxydation.

2d. The object of this function cannot be to support animal heat.

3d. The cause of animal heat is owing to a function purely vital.

4th. It is not to cool the body.

5th. The disengaging a certain portion of carbonic acid, the fixation of oxygen in the blood, and the support of irritability, are the direct effects of respiration.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE attention of the profession having been particularly called of late to the subject of crural hernia, by two very valuable publications, viz. Mr. Hey's Practical Observations in Surgery, and Dr. Monro's, (jun.) Observaons on Crural Hernia, I am induced to send you some Remarks relating to this disease; and will thank you to give them a place in the next Number of your useful Journal.

I am, &c.

Manchester, Nov. 20, 1803. JOHN HULL.

OBSERVATIONS ON THE CRURAL HERNIA.

The Crural Hernia, or Merocele, is generally considered as a protrusion, or descent of a portion of the contents of the abdomen, included in a sac derived from an elongation of

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of the peritonæum, under the crural arch. By a few authors of high reputation, this genus of hernia has been allotted a more extensive signification, being made to comprehend other ruptures, that appear in the bend of the thigh, in which the protruded viscus passes *over* the crural arch, through a separation of the fibres of the transverse and internal oblique muscles and of the aponeurosis of the external oblique muscle of the abdomen. Chopart and Dessault,* as far as I have been able to determine, are the first writers who have noticed the latter kind of hernia; and it has since been admitted as a species of crural hernia by Richter† and Callisen.‡ None of the above mentioned authors have given a detailed account or case of this hernia as passing over the crural arch, so that it is not easy to determine whether it be a conjectural or real species. If such a hernia have been observed, I should think it may with more propriety be referred to another genus; to the inguinal hernia, if it accompany the spermatic vessels, or round ligament of the womb, in their egress from the abdomen; and to the ventral hernia, if the protrusion take place in a point where no vessels are passing out of the abdomen. I shall therefore take no further notice of it in this paper.

The true crural hernia is supposed by Garengeot to have been known to Paul and Barbette. Sabatier also considers the latter as acquainted with it. However this may be, its existence appears to me to have been first properly established by Verheyen, professor of Anatomy at Louvain, in the year 1694, from the dissection of a soldier, who died in the hospital of that city from an incarcerated merocele. The particular circumstances of this case may be seen in Palfyn's Anatomie Chirurg. P. ii. p. 73. Ed. 3.

A considerable diversity of opinion has prevailed among Anatomists and Surgeons with respect to, 1st. the relative situation of the crural hernia to the crural vessels; 2dly,

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* La hernie située au pli de la cuisse se nomme crurale; les viscères passent derrière le ligament de Fallope, &c.—On sortent au-dessus de ce ligament par un écartement des fibres des muscles transverse, oblique interne & de l'aponeurose de l'oblique externe. *Traite des Maladies Chirurg.* Tom. 2, p. 205.

† "Zuweilen liegt dieser bruch gar nicht unter dem Poupartschen bande, sondern er tritt durch eine spalte in den muskelfiberu über dem Pouparts-chen bande." *Abhandlung von den Brüchen*, p. 650.

‡ "Hernia cruralis sub margine ligamenti Fallopii in spatio, vasis iliacis decurrentibus dicato, interdum supra ligamentum Fallopii per diductas fibras aponeuroticas, exoritur." *Syst. Chir. Hodiernæ*, T. ii. sect. 748.

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the part which produces the stricture, when it is incarcerated; and, 3dly, the proper method of removing the stricture by a chirurgical operation. The remarks which I have to offer at present, relate principally to these three circumstances. I think it necessary to premise a concise description of the crural arch, and to notice the course of the different blood-vessels liable to be wounded by the division of the arch, because a good deal of confusion and some apparent contradictions are met with in the writings upon this subject, for want of precision in the employment of terms.

The crural arch, which, from the real or supposed discoverer of it, has been named the *ligament of Fallopius* or *Poupart*; from its situation and texture the *inguinal and crural ligament*, the *doubled tendon of the external oblique muscle*, &c. is rather irregular in its form and low in proportion to its extent. Its external extremity or foot, is attached to the superior and anterior spinous process of the os ilium; its internal extremity to the spinous process and part of the crista of the os pubis; hence it is considerably higher at its external than its internal extremity. By many anatomists this arch is stated to be tendinous, and is considered as formed by the duplicature of the lower aponeurotic border of the external oblique muscle only. By others it is considered as a distinct ligament, to which the lower border of the external oblique muscle is attached. This dispute about the tendinous or ligamentous nature of the arch may, I apprehend, be settled by the following observation made by Soemerring. "Certe etiam tendines nil sunt, nisi ligamenta musculorum." *De Corporis Humani Fabrica*." Tom. iii. sect. 73.

The crural arch has a groove, or canal, along its upper surface, which is deeper nearer to its insertion into the os pubis, and is formed by the tendon, or ligament, being doubled backwards and upwards. The anterior margin of the arch, or that which is turned towards the integuments, is thicker and rounded; the posterior margin, which is turned towards the peritonæum, is thinner and sharper to the feel.

Under the crural arch are situated the external iliac and great psoas muscles, the anterior crural nerves, the external iliac blood-vessels, and the lymphatics of the lower extremity.

Nearly in the middle of the arch the external iliac artery passes to the thigh, and there takes the name of the crural artery. The iliac vein is situated a little more inwards than the artery. The space between the iliac artery and

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and the outer extremity of the arch is completely filled by the iliacus internus and psoas magnus muscles and the anterior crural nerves, so that in the natural state of the parts no aperture is met with there. But that part of the arch, which is situated more inwards than the iliac blood-vessels, is not equally filled, a small aperture being always found between the iliac vein and the internal foot of the arch. This aperture, to which Gimbernat has very properly given the name of the *crural ring*, is larger in the female than in the male. It is bounded above by the crural arch and below by the os pubis. Towards the abdomen it is covered only by the peritoneum; hence a portion of omentum, intestine, &c. may pass through this aperture to the thigh, and carrying the peritoneum along with it, may form the crural hernia. And we can imitate this hernia pretty well after opening the abdomen, by passing a finger from thence through the crural ring to the thigh. Below, or towards the thigh, this ring is covered by the fascia lata, so that the hernial sac cannot be brought into view till the fascia has been divided. The fascia lata being intimately connected with the crural arch, gives it a considerable degree of tension when the thigh is extended, and relaxes it considerably when the thigh is bent to a right angle with the trunk. The posterior margin of the crural arch, which has been mentioned above as feeling sharp to the finger, is much less distinct when the thigh is bent; a circumstance necessary to be attended to, when we employ the taxis, as it then presents less resistance to the return of the prolapsed viscus.

For an external view of the crural arch, the reader is referred to Mr. Ch. Bell's System of Dissections, plates 13 and 14, and to Dr. Monro's (jun.) plate 5, fig. 1. A good internal view of the crural arch and ring is given by Dr. Monro, (jun.) in plate 3, fig. 1, as it appears in the female subject; and in plate 4, fig. 2, as it appears in the male. It was the more necessary to give figures of these parts in both sexes, as the Doctor has discovered a material difference in the male and female, the crural ring being smaller and the posterior part of the arch being much broader in the former, especially at and near its insertion into the os pubis.

The epigastric artery arises from the external iliac, a little before the latter passes under the crural arch. It in general first passes down a little way, and then passing obliquely upwards and inwards along the outer and upper part of the crural ring, continues its course behind the in-

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ternal oblique and transverse muscles, but before the peritoneum, till it reaches the posterior side of the rectus abdominis. Sometimes, however, it passes immediately upwards and inwards, thus keeping at a greater distance from the crural ring. See Monro's Plates, 6 and 5

The spermatic artery in the male, in its course from the abdomen to the testicle, first passes on the outside of the epigastric artery, that is, between it and the iliac artery, and then crosses the epigastric most commonly directly over the crural ring. It passes out of the abdomen under the inferior margin of the transverse muscle, and through the lower margin of the internal oblique. The spermatic artery and vein being joined by the vas deferens, and furnished with a muscular covering, named the cremaster, chiefly from the internal oblique, form the spermatic cord, which passes downwards for about two inches between the internal and external oblique muscles in the groove on the upper part of the crural arch, before it arrives at the inguinal ring. Hence it appears, that the spermatic vessels are much more superficially seated than the epigastric artery, after they have crossed it, and may be exposed by an incision made through the lower part of the external oblique only, just above the crural arch. This is a circumstance deserving particular attention.

The round ligament of the womb, in the female, passes out of the abdomen, and crosses the epigastric artery in the same manner as the spermatic vessels do in the male; it afterwards descends in the same way along the canal in the upper part of the crural arch to the ring of the external oblique muscle. See Monro's plates, 6 and 5.

When a hernia is formed in the male by the descent of a portion of one or more of the abdominal viscera through the crural ring, the epigastric artery passes along the outer and upper side of the neck of the sac, and is liable to be wounded by an incision made upwards and outwards thro' the crural ring; the spermatic artery passes along the upper and inner side of the neck of the sac, and is liable to be divided if the ring be cut upwards and inwards; and both these arteries, when they cross each other directly over the neck of the sac, (which is most commonly the case) are liable to be wounded by cutting through the crural ring directly upwards. These arteries sometimes cross each other a little on the outside of the sac, in which case the spermatic cord only will be divided by cutting through the crural ring directly upwards, the epigastric artery being situated beyond the reach of the knife.

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In the female the above observations will apply, substituting the round ligament of the womb for the spermatic vessels. See Monro's plates, 6 and 5.

The division of the epigastric artery in the operation for the crural hernia, has, in various instances, occasioned a fatal hæmorrhage. And as it has always been found extremely difficult to tie this artery, we should take great care to avoid wounding it.

The division of the spermatic cord will also produce a dangerous hæmorrhage; and, though this should be restrained, the testicle of that side of the body may be rendered useless by the division of the spermatic artery or the vas deferens. It is therefore of great consequence that the spermatic cord should not be wounded in the operation for the crural hernia.

The division of both the epigastric artery and the spermatic cord, which may happen when the crural arch is cut through directly under the point where these vessels cross each other, must necessarily prove still more embarrassing to the operator.

In operating upon the female, the epigastric artery is principally deserving of attention, because the division of the round ligament of the womb will not be attended with any very serious consequences, especially in women beyond the period of child-bearing.

In the usual distribution of the blood-vessels, the arteria obturatoria arises from the iliaca interna, or some of its branches, and passes to the foramen thyroideum, quite out of the reach of the knife; but, in some cases, this artery is so situated as to be liable to be wounded in dividing the crural arch: for it sometimes arises from the iliaca externa by one common trunk with the epigastric artery; and when this trunk is long, the arteria obturatoria has been found passing first along the upper and then on the inside of the neck of the hernial sac, so as almost to surround it. Mr. Thompson, of Edinburgh, has observed this course of the artery in six out of ten preparations which he had examined, and considers it as an insuperable objection to the mode of operating in crural hernia proposed by Gimbernat, (see Monro, jun. p. 66.) When the common trunk of the arteria epigastrica and obturatoria is short, the latter is observed passing down on the outside of the neck of the sac, so as not to be in danger of being wounded. See Monro's plate 4, f. 1.

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§ 1. *Of the Situation of the Crural Hernia, with respect to the Crural Blood-vessels.*

Several authors of eminence, among whom we may mention Chopart and Dessault, Richter, Mr. B. Bell, and Herin, are of opinion that the crural hernia, though more commonly placed on the inside of the crural vessels, is sometimes situated immediately before them, and even on the outside of them, or nearer the iliac extremity of the crural arch.

Gimbernat, on the other hand, contends, that this hernia is always situated on the inside of the crural vessels, or nearer the symphysis pubis; and Dr. Monro, jun. seems to agree with him.

I have not met with any case recorded, in which the crural hernia was originally situated on the outside of the crural artery; and though I would not venture to deny the possibility of such an occurrence, yet I should not expect to find this hernia in any other situation than on the inside of the crural vessels, (protruded through the crural ring), when it first takes place, or whilst it continues of small size. In all the cases of crural hernia, which have fallen under my observation, the size of the tumor was from that of a hazel nut to that of a walnut, except in one, which I attended some years since with Mr. Nanfan. In this instance the tumor was nearly as large as the head of a new born child, and occupied almost the whole of the superior and anterior part of the thigh. It had been many years in an irreducible state, and when I was called in, the integuments covering the tumor were highly inflamed, and a gangrene had taken place in the centre, to a considerable extent. The hernial sac was not laid open by the separation of the slough, and the old man, after some time, got well. He is since dead, and I regret much that the opportunity of examining this hernia by dissection was lost. As but few cases are recorded, wherein the crural hernia has attained a large size, it may not be improper to state here, that Le Dran has related a case, in which the hernial sac was eight inches in circumference, and three inches in depth; and that M. de la Faye, in his Notes to Dionis's *Cours d' Opérations de Chirurgie*, p. 339. ed. 4. Paris 1740, has asserted, that this hernia has been known to extend to the middle of the thigh. In these rare cases, where the hernia, from its bulk, is necessarily found situated before and on the outside, as well as on the inside, of the crural vessels, I think it highly probable, that the descent

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descent of bowel first took place through the crural ring on the inside of the large blood-vessels, and that the ring had gradually yielded on the outside, so as to allow the hernia to extend laterally in that direction. We know that the inguinal ring has, in some instances, been so far dilated as to allow three fingers, or more, to pass through it with ease; and Le Dran found, in the case mentioned above, that the Fallopian ligament had yielded so much, that one might almost thrust four fingers, with the integuments, underneath it. *Obs. de Chirurg.* T. ii. Observ. 58. If this opinion be correct, it will also follow, that the epigastric artery, and spermatic cord, or round ligament of the womb, according to the sex of the patient, will be carried outwards with the hernia, and that the epigastric artery will be still situated on the outside of the neck of the sac, and liable to be wounded by making the incision of the arch upwards and outwards.

§ 2. *Of the Situation of the Stricture in the incarcerated Crural Hernia.*

It is unquestionably of the greatest importance to an operator, to know in what different ways and situations the stricture may be formed in crural hernia, otherwise he may be liable to much embarrassment. He may also be led to divide a part unnecessarily, or may leave the part undivided, which really produces the stricture. In the latter case it is obvious that the operation will prove of no advantage to the patient.

Gimbernat tells us, that it is the thin posterior border of the crural arch "which always forms the strangulation."

Many writers consider the rounded anterior margin of the crural arch, as being frequently the seat of the stricture.

By Günz, Bertrandi, Richter, * Callisen, and Arneman, it is stated, that the stricture is sometimes produced by the fibres passing from the fascia lata of the thigh into the crural arch.

Mr. Hey, of Leeds, has asserted very lately, that the stricture is not caused by Poupart's ligament, but by another part, situated three-eighths of an inch below Pou-

* Es scheint, dass zuweilen bloss die flechsenfasern, die aus der fascia lata ins Poupartsche bandgehen, die ursache der einklemmung sind; wenigstens hat man geschen, (Günz, Bertrandi) dass sich der bruch so gleich Zurück bringen liess, als diese fasern durchschnitten waren. *Anfangsgründe der Wundarzneykunst.* B. 5. § 530.

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part's ligament, and which, by way of distinction, he has named the *femoral* ligament.

It has been long ascertained, that the stricture, in crural hernia, may be occasioned by the hard and contracted state of the neck of the sac. Le Dran, in the year 1726, performed the operation for this hernia in a male, and found the strangulation occasioned by the neck of the sac. "He says, "Je m'apperçus aussi-tôt après, que ce n'étoit pas le ligament, qui faisoit le plus fort étranglement & que c'étoit l'entrée du sac, qui, ayant été long-temps comprimée par la pelotte du brayer, s'étoit retrecie. Alors y portant mon doigt, je sentis, que ce sac ressembloit à une bourse fermée & que son entrée seule étoit capable d'empêcher la reduction des parties, tant elle étoit étroite." *Observ. de Chir.* Tome ii. p. 6. He also opened the body of another man, in the same year, and found the strangulation occasioned by the neck of the sac, which, with its contents, had been returned into the abdomen. *Ibid.* p. 14. And Dr. Monro has mentioned a case, that occurred to him in the year 1782, in which a small portion of the ilium was strangulated by a straitness and thickening of the neck of the sac. *Description of all the Bursæ Mucosæ, &c.* p. 49.

And Mr. Cline, in his valuable lectures on Hernia, states, that septa, or partitions, are occasionally found in the hernial sac below its neck, by which a stricture may be induced; and shews a preparation of a bubonocele, with three of these septa formed within the sac. I do not know that any of these septa have hitherto been observed in the sac of a crural hernia; but they may be regarded as a possible cause of strangulation in this genus of hernia.

§ 3. *Of the means proposed and employed for removing the Stricture in incarcerated Crural Hernia.*

The division of the fascia lata, where it lies over the hernial sac, has, in some instances, enabled the operator to return the protruded parts, without cutting or dilating the crural arch. It may therefore be worth while to try this method before we undertake to divide the arch; but in general, I believe, it will prove insufficient. The manner of dividing the neck of the hernial sac, when this is the seat of the stricture, has been very ably pointed out by Dr. Monro, sen. and will be considered hereafter, when I come to deliver my opinion on the best method of performing

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forming the operation, under the different circumstances that may occur.

The means proposed for removing the stricture produced by the crural arch, which is by far the most frequent cause of strangulation in the hernia under consideration, will now be examined. These may be referred to two heads, viz. the *dilatation* and the *incision* of the arch.

1st. In consequence of the danger arising from wounding the epigastric artery and spermatic cord in cutting the crural arch, the mere dilatation of it has been recommended, and two instruments have been invented for the purpose; a curved levator, or blunt hook, by M. Arnaud, and a dilator, with two branches, somewhat in the form of a gorget, by M. Le Blanc. The attempt to dilate the crural arch, is disapproved of by Mr. B. Bell, and by Gimbernat; but recommended by Chopart and Dessault, Richter, Callisen and Arneman. Richter, indeed, is of opinion, that a surgeon is not justified in cutting the crural arch, before he has tried to dilate it by Arnaud's hook, or Le Blanc's dilator.

I have not tried either of these instruments; and though I should not expect much advantage from the use of them, I do not see any particular objection to making an attempt to dilate the crural arch, provided care be taken not to injure the subjacent parts. The hook appears to me to be the preferable instrument, as it affects the arch only; whilst the dilator can scarcely be managed, so as not to injure the protruded parts, or crural vessels.

2d. With respect to the *division* of the crural arch, authors in general are agreed, that the *extent* of it should be no greater than is necessary to allow the return of the protruded viscus, or viscera. They differ, however, very much as to the *part* of the arch, which ought to be divided, the *direction* in which the division ought to be made, and the *manner* of executing it.

In giving an account of the opinions of the different systematic and practical writers upon this subject, it may be attended with some advantage to refer them to the six following classes.

The 1st, comprehending those writers who have not distinctly pointed out the particular direction in which the division of the arch ought to be made, as Garengeot, Heister, Pott, &c.

The 2d, comprehending those who direct the incision to be made upwards and outwards, as Sharp.

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The 3d, comprehending those who direct the incision to be made upwards and inwards; *e. g.* Le Dran, &c.

The 4th, comprehending those who direct the incision to be made straight across, or directly upwards, as Dr. Monro, sen. &c.

The 5th, comprehending those who direct the incision to be made directly inwards, where the posterior margin of the arch is inserted into the os pubis, as Gimbernat and Latta.

The 6th, comprehending those who are of opinion, that the division of the arch is to be made in different directions, according as the hernia is differently situated, with respect to the crural vessels, as Chopart and Dessault, Richter, Lassus, &c.

Upon the whole, however, it will be found more convenient to give their opinions, as nearly as I well can, in a chronological order; and this will be done as concisely as possible.

Garengeot is the first author, whom I have hitherto met with, that has published cases of the operation for the crural hernia. He informs us, that he had seen the wound of a woman dressed in May 1718, whom Mr. Petit had operated upon with success, without opening the hernial sac; and he has related two cases, which occurred to himself in the years 1720 and 1728. In the former of these, a winged director was passed under the crural arch, and the bistory was scarcely introduced into the groove of the director, before the arch was relaxed, and the intestine returned spontaneously.—*Traité des Opérations de Chirurgie.* Tome i. p. 28. Ed. 2. Paris 1731. 12mo. *Memoires de l'Acad. Roy. de Chir.* Tome ii. p. 457. 12mo.

2. Heister is still less explicit than Garengeot. He merely says, "Ampliari paululum foramen illud, unde intestina proruperunt, oportet." *Inst. Chir.* Pars 2. p. 820. Amstelad. 1739, 4to.

3. Le Dran directs us to cut the crural arch, by carrying the incision obliquely towards the linea alba, and to make it very small, because the epigastric artery is near. *Traité des Oper. de Chir.* Paris 1742.

4. Platner gives no direction whatever for the division of the crural arch.—*Inst. Chir. Rat.* § 849, 8vo. Lips. 1745.

5. Sharp, both in his Treatise on the Operations of Surgery, and in his Critical Inquiry, directs the crural arch to be cut obliquely outwards, as the spermatic vessels will thus be avoided. He allows that in this way the epigastric artery may be divided; but he thinks this accident ought

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ought not to embarrrass an operator, as it may *instantly* be taken up by the needle.

6. Pott states, that if the incision of the ligament be made of any length, let it be made in whatever part it may, the risque will be great of wounding either the spermatic cord, or the epigastric artery. He seems to depend too much on our being able to return the contents of the hernial sac without dividing the crural arch, " as there is a considerable space between the os ilium and the os pubis, to manage such reduction in." He says, it is not so easy to take up the epigastric artery as to direct it to be done; but observes, that the spermatic cord is certainly more to be regarded than it. He merely directs us, if the division of the crural arch be unavoidable, to be particularly careful to keep the extremity of the probe-pointed knife within the end of the fore-finger, and to make as small an incision as may be necessary.— *Chirurgical Works*, vol. 2, p. 153, Lond. 1783, 8vo.

It would appear that Pott did not write from observation, in directing the point of the knife to be kept within the end of the finger, and that he was not very well acquainted with the anatomy of the crural arch, from his declaration, relative to the space for managing the reduction in.

[To be continued.]

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE advocates for medical improvement, cannot but lament that the well-earned reputation of *digitalis*, for its general remedial power in the early, or curable, stages of pulmonary consumption, should be called in question by an experience, much too limitted to justify even a suspicion, much less an unqualified attack on its admitted efficacy.

My allusion is to the *two cases* detailed by Mr. Earnest, in the last number of your Journal,* in which, that very active medicine is stated to have been almost inert, or at

* Page 554—7.

least

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least to have had no salutary influence whatever. The tincture of digitalis, as proposed by the judicious Dr. Maclean, was the preparation employed, which tincture appears to possess the virtues of the plant in the utmost degree of concentration. The medicine then, in a vast majority of cases, must have been impressively active; and, agreeably to the observation of others, in no small proportion beneficially so. Mr. Earnest's cases, therefore, do not fairly impeach the salutary properties of the medicine, but denote only, that either an unexplained peculiarity, or a positive incurability, placed the work of relief out of the reach either of that or any other remedy. In what morbid relations the cases stood with the acknowledged efficacy of digitalis, is not stated, but might have been somewhat elucidated by an examination of the lungs after death.

It has scarcely been pretended, that digitalis ever cured the last stage of pulmonary consumption; it would savour too much of the daring declamation of quackery, to insist that such a necessarily, deadly, and actually dying state of life, could possibly be restored to health.

If the beneficial agency of a medicine be determinable by its occasional failure, not an article in the materia medica would abide such an estimate of its virtue. Even Peruvian bark, opium, mercury, and antimony, would shrink from such a test of infallibility.

Digitalis has deservedly taken its station in the list of the most active remedies; nor can it be degraded from its just rank by an inadequate trial of its powers. After what has been affirmed of its salutary influence in pulmonary consumption, *two hundred*, instead of *two cases*, should have been pressed into the service of its opposition, to have warranted assailing its high credit. Nor would my scepticism in its inefficacy have been persuaded, even on the authority of two hundred adverse cases, if the trial had not been extended beyond three weeks.

A much longer period is necessary to perform the mighty work of curing pulmonary consumption; and, indeed, when that threatening disorder is curable, it has been found that the best efforts of digitalis require to be urged, and sustained, from at least one month to three, to insure a permanent recovery.

Peculiar and inscrutable irrelevancy of temperament to specific medicinal efficiency, does not preclude the possibility of its being highly influential in more congenial circumstances of excitability; it amounts to nothing more than

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than an exception to a general rule, and is of no practical authority.

The experienced observer of the salutary agency of digitalis in pulmonary consumption, has not to learn that cases might, and do occur, in which that medicine is of no avail in that disease; but these instances are so abundantly counterbalanced by its successful operation, as to reject them from all calculation, to the disparagement of its real efficacy.

My own experience has furnished me with many instances, in which digitalis was either inert, or manifestly injurious; but these presented amidst a groupe of salutary efficiency, that enabled me to assign to the medicine, a degree of curative power, which none equal in pulmonary consumptiou, and but few exceed in any other disorder.

Mr. Earnest's humanity, science, and zeal for medical improvement, should induce him to rejudge his cases, and suspend his inference to the disadvantage of digitalis, until a research, commensurate with the importance of the subject, and the opportunities his public situation (as house surgeon to the Sheffield Infirmary) so amply affords him, shall authorise him to deliver an unequivocal and decisive opinion on its anti-phthisical virtue.

The average result of one hundred trials, conducted with Mr. Earnest's apparent accuracy, but extended, if necessary, to three months duration, will certainly, if any faith is due to experience, at once justify this comment, and convince Mr. Earnest, that digitalis has an irresistible claim to confidence for *generally* curing the early, and alleviating the late, stages of pulmonary consumption.

I am, &c.

Taunton,
Dec. 10, 1803. ROBERT KINGLAKE.

CASE OF DISEASED BLADDER, *and* CASE OF DIVIDED LARYNX; *communicated by* Mr. I. ROCHE, *Surgeon to the Third Regiment of Light Dragoons.*

THE diseases to which the bladder is liable, are various, sometimes giving way with rapidity, oftener extremely obstinate, and in some cases fatal; none, however, appear more distressing than incontinence of urine, from whatever cause it may have originated. The following case is worth attention from the celerity with which it yielded to the treatment

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treatment described, after its obstinate resistance to so many powerful agents previously employed.

William Reny, almost on his first essay on horsemanship, struck the lower part of his belly with much violence against the pummel of his saddle; the immediate consequences were external inflammation, and a constant flow of urine, immediately on its deposition, from the ureters. The various remedies generally suggested on such occasions were in vain exhibited. Blood-letting, cold applications, blisters, the internal use of tincture of cantharides, pressure, &c. afforded no relief, and he rather lost than gained ground. His stomach, heretofore good, was now much debilitated, his pulse quick and small, the abdomen painful and hard, and his penis in an indurated state of enlargement; add to these the distress of constant micturition, and the case will be allowed to have been unpromising. Having frequently observed the effect of counter irritation by producing a metastasis, I resolved to try the effect of rubbing over the abdomen the following ointment.

R. Unguenti hydrargyri fortioris unciam, camphoræ solutæ paucis guttis spiritus vini rectificati drachmam demidiam, M. et fricetur subinde scrupulum secundis horis regioni abdominis.

I did not however wholly rely on this. In order to stimulate the sphincter vesicæ I introduced a middle sized catheter, as well as I could judge so far, as, that the perforations on its end would reach the entrance of the bladder. I then poured about thirty drops of tincture of opium, through the tube, which arriving near its end, emerged on every side, by which means I had reason to conclude the vis insita of the sphincter was roused into action. This was not attended with much pain, and was thrice repeated. After each rubbing of the ointment, I caused the abdomen to be firmly, yet not too tightly, swathed with a flannel roller; a practice I have found of much service in many diseases of the abdominal viscera. Pursuing the plan detailed, I had the satisfaction of inducing in two days a regular flow of urine completely under command; a soreness of the mouth had previously taken place, the camphor having quickened the action of the mercury. The patient has suffered no other inconvenience since, than a slight soreness through the course of the urethra, which, om the means employed, might very reasonably have en expected.

The second case is no further worth notice, than that it

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tends to prove, that a part of the thyroid cartilage may be removed without inconvenience, or injury to the voice.

John Benson, a strong muscular man, in a moment of insanity, attempting suicide, cut his throat in four places. I saw him almost on the instant, and found him bleeding profusely and labouring under irritation of the stomach, which consequently caused difficulty, and some loss of time. After the vomiting had in some degree ceased, I was able to make a minute inspection of the wounds. I found three of little consequence, the fourth was large and deep, the razor was twice drawn through this wound, and as often through the inferior part of the thyroid cartilage, which presented a sharp angular point, thus:

The point *b*, was directed outwards, it was therefore evident I could not close the wound, and leave it so situated, as it would have acted as an extraneous body, of course a cause of constant irritation; I dissected it off at *a*, leaving an apparent opening into the larynx, I brought, in making the interrupted suture, as much of the muscle and cellular membrane as possible over the opening, and inserted the needle as deep as I could without touching the cartilage; by which, I conceived, I guarded in some measure against its loss. From the first dressing no complaint whatever occurred; in one fortnight he was perfectly recovered; and it would not seem, that the least inconvenience has arisen from the loss of cartilage, a part apparently so necessary for the purposes of voice, inspiration, &c.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

YOUR correspondent, Mr. Marson, in a late Journal, when he attempts to deliver the placenta, says, he applies his left hand to the sacrum, and the right to the parietes of the abdomen, on the region of the dilated uterus; makes a slight pressure with both hands, and increases it gradually, till he exerts what he calls *sufficient* force for two minutes. He frequently relieves his right hand, with the idea of forming a *kneading* motion. He then ties and cuts the navel string, and says, "I again apply to the funis, and find

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find the placenta waiting for me, either at the os externum, in the vagina, or so as to be brought away directly, or in a minute or two afterwards; if it should not, I apply pressure as before, and the business is generally compleated; but I should repeat it again and again if necessary." He does not say that he ever applied to the funis till he had performed the operation of kneading nearly two minutes, tied and cut the funis; and the placenta was generally waiting for him, and ready to be brought away in a minute or two afterwards.

Whatever use the right hand was of, in forwarding the separation of the placenta, I see no use the left was of when applied to the sacrum. Does Mr. M. apply such force with the right as to move the woman on the bed, and is obliged to keep her steady with the left? He certainly applies more than a slight pressure. In my humble opinion, it would be more to the purpose, to apply both hands to the parietes of the abdomen, and press with them alternately in the true stile of kneading.

As the operation of kneading has been no part of my practice, I can say nothing in its favour; but I seldom meet with a case in which the placenta is not delivered in the same space of time, *i. e.* in four minutes or a little more, without the operation of kneading. I have attended too many labours, where, from the long continued strong pains the parietes of the abdomen were so painful when touched, that they could very ill bear the necessary pressure of a bandage, or even to allow the bed-clothes to press upon them. There, if the placenta did not advance readily, the kneading process would have been a cruel operation, especially if repeated again and again.

Among other methods, Dr. Denman recommends "making a *moderate* pressure with the expanded hand upon the abdomen, to aid the action of the uterus; but says, the term moderate has no precise meaning;" It is not so precise a meaning as Mr. M's sufficient. He afterwards recommends, "the application of the half closed hands to the abdomen." I suppose he means the hard knuckles. This looks like kneading in earnest. I am very well assured that if the knuckles are applied with such force, as to separate the placenta, the woman must suffer more pain, and the parts will be more injured, than by the introduction of the hand, which might safely and effectually perform the separation and exclusion, which no man, I think, will pretend to promise by the operation of kneading. I have removed

ral soon after the birth of the child, when I discovered

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an irregular contraction, and even on account of the atonic state of the uterus, and also when there was an unusual firm adhesion. And, I speak from many years experience, I have not had cause to repent having done so. I have never seen injury nor inconvenience in consequence of acting in that manner; but have heard of many unfortunate cases, where the placenta was left to nature, or allowed to remain too long before it was extracted by art.

Dr. Denman tells us, "Though the placenta may be retained for many hours after the birth of the child, if we be convinced of some degree of descent, especially if we can feel that part of it into which the funis is inserted, we have no reason to be alarmed, or to hurry its exclusion, unless there be an *existing* hæmorrhage; then the placenta may be suffered to remain till it is excluded by the action of the uterus; or, as it descends, the most gentle assistance may be given by pulling at the funis to extract it, without any apprehension of danger, whether it be detained two, or even twenty-four hours, because we have at all times under these circumstances, an easy and certain command of it."

I beg leave to remark on this paragraph, that the word many, like the word moderate, conveys no information; it may mean 3, 36, or 360 hours. Dr. Denman says, "I once saw an instance of a whole placenta retained till the fifteenth day after the birth of the child, and then expelled with little signs of putrefaction, except upon the membranes; the whole surface which had adhered exhibiting marks of fresh separtion. The recovery of this patient was very fortunate, for I have seen several other cases of a similar kind terminate fatally." So much for leaving the placenta to be expelled by the action of the uterus. He says, if we are convinced of the descent, &c. we have no reason to be alarmed, unless there be an *existing* hæmorrhage. He does not tell us how far he introduced a finger to feel the part where the funis was inserted. If that part was descended to the os externum, I think it bad practice to allow it to remain till it is excluded by the action of the uterus, "when we have an easy and certain command of it."

I will also take the liberty of remarking on what Dr. D. calls an *existing* hæmorrhage. I have been called to attend several women, on account of dangerous faintings, who were suffering from *existing* hæmorrhage; where the midwife, instead of attending to the woman, had chose to attend to the dressing the child, and had left the pla-

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centa to be excluded by the action of the uterus. I there found, in consequence of the placenta being left, there was no alarm about hæmorrhage, as the vagina was blocked up by the placenta; and, from the atony of the uterus, and the want of a pressure, the uterus was almost as large as before the birth of the child, being filled with blood; from which it is evident, there may be an *existing* though not *apparent* hæmorrhage.

No man can tell whether the placenta, if retained two hours, will be excluded in other two, or in twenty-four hours; nor can he tell whether it will be excluded at last, without art or force, unless "he has an easy and certain command of it." If that is granted, I am certain the hand may be introduced with incomparably more ease soon after the birth of the child, than it can be after twenty-four or forty-eight hours, when, particularly in laborious or preternatural labours, the parts are in a state of inflammation, and much contracted, as I have too often experienced. I also feel for the woman and her friends; her and their anxiety is very great, till there is what they call a happy separation. And as I see no good reason for delaying the extraction so long, I think it safer and better to extract it when it can be done so easily; and think it a good general rule, according to Dr. Denman, "to prefer the introduction of the hand to separate and bring the placenta away, rather than incur the danger of separating the funis from the placenta, or of inverting the uterus by pulling the funis."

Mr. Marson says, "Admitting the placenta to be urged forward by pressure, it is very clear that the hour-glass contraction, as it is called, when this is practiced, cannot take place." Allowing his argument full force, instead of begging the question, I have to observe, that in every hour-glass contraction I have met with, the contraction succeeded the birth of the child so quickly that there was no time to apply pressure; and, sanguine as he is about his method of kneading, I am afraid, if ever he meets with such a case, he will find his pressure inadequate to force the placenta through the contraction. He seems to challenge such a case; I wish him success.

Dr. Denman says, "This assistance," meaning the pressure with the half closed hand, "cannot be given in the worst cases, that is, when the uterus is not at all contracted, or contracted irregularly." If that is the case, this new method of kneading can seldom or never be requisite, if the uterus contracts regularly, and in proper time, the

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the placenta will be excluded, with very little assistance, in the same space of time as those under Mr. Marson's management, as observed in the beginning of this paper; viz. four minutes, or a little more.

In a former number of the Medical and Physical Journal, I observed a case on the delivery of the placenta, by Mr. Bartley. He says, the woman was delivered without assistance before he arrived, that considerable hæmorrhage had ensued, but had ceased. The woman was extremely weak and exhausted by the effusion, &c. On introducing his hand, he found a *morbid* adhesion had taken place near the fundus uteri. I have never considered an adhesion, though firmer than what are generally met with, as deserving the name of *morbid*. It appeared from the hæmorrhage which succeeded the birth of the child, that the whole of the placenta had not been in a state of morbid adhesion. He waited four hours and gently strained the cord during the pains. The woman became very importunate, to have the placenta taken away at all events. He again introduced his hand, and removed several large clots of blood which obstructed its passage. Then cautiously introducing his fingers round the whole substance of the placenta, gradually detached it, and brought it away entire. Slight hæmorrhage and repeated faintings alarmed him, and made him repent that he had not persisted in his first resolution of trusting to nature for the exclusion of the placenta. If Mr. B. had removed the placenta the first time he introduced his hand, there might have been the same slight hæmorrhage and faintings as took place at last, and no more. But from whence originated the large clots of blood which obstructed his hand? They were formed during the four hours he sat pulling the cord; and which was a very effectual method of occasioning a return of the hæmorrhage which had appeared at first. But as the blood coagulated in the uterus, he did not suspect any hæmorrhage *existing*. By his delay he gained no advantage, but the woman lost all the blood which formed the clots, which might amount to one or two pounds. No wonder she had repeated faintings. The woman could not be stronger at last than she was at first, when he introduced his hand, after losing so much more blood. His account of separating the placenta at last, does not make it appear that there was any morbid adhesion. We are told of schirrous and cartilaginous adhesions, but this did not appear to be one of these. The placenta remained *partly* attached to the uterus, probably from its atonic

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state induced by the primary hæmorrhage. Upon the whole, the woman's importunity, possibly, contributed to save her life.

Mr. B. concludes with observing, "that the placenta may be retained with safety, a much longer time than is generally admitted." The above case, in my opinion, does not support that position. I am one of those, who can see no safety in allowing the placenta to remain four hours under the forementioned circumstances, I mean an *existing* though not apparent hæmorrhage, attended with great weakness and faintings.

Mr. Marson drops some hints on the use of pressure in flooding cases. When properly applied, it is the only remedy to be depended upon. I have often wondered that it is never mentioned in Systems of Midwifery. Nothing but cold, wet, icy applications, which as I have always condemned I have never used, nor have I ever lost a patient in flooding. Mr. Marson also hints that he may illustrate and enforce the application at some future period. I for one of your readers wish much to hear his sentiments on the subject, when perhaps I may be induced to give mine.

I am, &c.

Newcastle,
December 1, 1803.

A. FOGE.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

AS improvement in the different branches of Medicine, is the grand object of your very valuable Journal, I conceive it to be the duty of every professional man to record every case which may occur to him, that appears likely in any measure to lead to the public good, and particularly any circumstance which may happen to prevent, and may occasionally obviate, the necessity of a dreadful operation in Surgery, where not only the loss of a limb, but sometimes the loss of life is the consequence.

In taking notice of the following case I do not pretend to propose any new practice, more than might occur to every judicious surgeon; but the recording such a case may make an impression on the minds of young practitioners, who are sometimes intimidated at meeting with a violent hæmorrhage, and may be the means of a similar

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plan being adopted, to the saving of many limbs if not lives.

In the beginning of September, 1802, Rose Clothier, aged about fifty, of an athletic habit, received a wound in the upper part of her left foot, from a reaping hook inflicted by a person who was standing next to her reaping, striking off an ear of corn, the hook being reversed; the wound was consequently in a diagonal direction, penetrated between the metatarsal bones of the third and fourth toes, and wounded the artery, from whence there was a considerable hæmorrhage.

The accident happened early in the morning, I think about eight o'clock. The medical gentlemen who were in attendance, found every effort frustrated which they employed for several hours to stop the hæmorrhage, and proposed amputation as the only resource for the preservation of life.

I was called in about six hours after the accident, and well knowing the impracticability of coming to tye an artery situated under the metatarsal bones and among the flexor tendons of the foot, I did not hesitate what to do as the most likely means to preserve the limb. The grand object being to retard the velocity of the circulation to that extremity, so as not to endanger the life of the limb, and thereby give an opportunity for a styptic to take a due effect; and I had the extreme felicity of witnessing the propriety of my conclusion.

I applied a tourniquet above the knee to the popliteal artery, and kept it to that degree of pressure which did not compleatly stop the circulation, but so far impeded it that after I had applied a small tent of lint dipped in colcoth. vit. and the necessary superficial dressings over, I did not perceive the least hæmorrhage. These dressings were permitted to remain in statu quo for three days, and the tourniquet was gently loosened every day. When the dressings were removed on the third day no hæmorrhage ensued, though the tourniquet was completely loose; the tent was gradually discharged, and the wound healed in a short time.

This case particularly shews the propriety of a deliberate and cool determination on the necessity of amputation; we ought in all cases, where the life of the patient is not immediately endangered, to give every means a trial, as we can but have recourse to the only alternative at last.

I am, &c.

Martock,
December 3, 1803.

J. P. WESTCOTE, Surgeon.

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IN Duncan's Annals for 1802, I observe a paper, by M. Monnot, Professor of Anatomy and Midwifery, at Besançon, containing in my opinion, some useful remarks on what is termed the Membranous Cataract, or that obfuscation consequent on the inflammation of the capsule, after the removal of the crystalline lens. As, however, the utility of these observations must be extremely confined from being presented to the public, by the editors of that work, in the original French, if you deem the following short account of them worthy of insertion in your useful Journal, it is much at your service.

Clement's Inn,
December 14, 1803.

I am, &c.
R. HALL.

PRACTITIONERS have, it is well known, been long divided in opinion as to the respective merits of the two operations of couching, and extracting the cataract. In this paper M. Monnot does not however enter into any discussion on this question, but merely confines himself to the improvement of the latter operation. He commences with a brief history of cataract, which, he observes, is first mentioned in the writings of Hippocrates, who describes with great accuracy the appearances of this malady, although he seems to have been wholly unacquainted with its true character, as well as the operation necessary for its removal; circumstances solely attributable to the impossibility, at that period, of ascertaining by anatomical examination the nature of the body intercepting the rays of light.

From that period until the time of Celsus, this department of surgery appears to have made very inconsiderable progress, as this Latin author was the first who recommended any operation for the cure of cataract.

It would be here unnecessary to follow the author in his detail of the different opinions maintained by various writers, respecting the nature and seat of this disease; according to him, the certainty that it proceeds from an opacity of the crystalline lens, was first demonstrated by Antoine Maitre Jean, but the method of operating practised by Celsus was nevertheless followed, with little variation, until the commencement of the last century.

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The first example of the lens being displaced from the posterior chamber of the eye, by means of a needle passed through the pupil, is recorded by De Mery, in the Memoirs of the Academy of Sciences for 1707; since which period various improvements have been made in the manner of conducting this operation, and on the instruments necessary in performing it.

M. Monnot divides cataract into true and false; the first, according to our author, proceeds from the lens acquiring a degree of opacity, which prevents the rays of light falling on the retina; the second, is owing to a total or partial dissolution of the crystalline, within its capsule, which he denominates the white or milky cataract; whilst the want of transparency in the capsule itself, is termed by him the membranous cataract. This last affection, which frequently succeeds the extraction of the crystalline lens, deprives the patient of sight, however dexterously the operation may be performed.

"This occurrence," observes M. Monnot, "may be prevented, if an intelligent and steady operator divide the posterior part of the capsule, which separates, and allows the vitreous humour to occupy the place of the crystalline lens. This membrane, being removed from the focus through which the light is directed, no longer impedes its access.

"To explain the superior advantages of this method over that commonly employed, I shall," continues the author, "particularly explain the mode of its performance.

"The patient being placed near a window, and the operator before him on a more elevated seat, his head rests on the breast of an assistant, who fixes it, by placing one hand on the forehead, whilst, with the other, he raises the upper eyelid. In order to prevent the motion of the organ, the other eye is covered with some compresses, supported by a bandage. The operator draws down the lower lid, without pressing on the organ, and takes, with the other hand, the bistoury from an assistant. He directs the point to the edge of the transparent cornea, and to the middle part, which answers to the lesser angle of the eye. Instead of directing it transversely, from the little to the great angle, he conducts it obliquely, so that the point of the instrument is in a straight line with the angle of the nose. This direction, which should be that of every cutting instrument, renders the wound more regular, and is less difficult in the execution.

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"When the wound is made on the transparent cornea, and the eye gently pressed, the lens breaks the slight connexion which retained it, and falls on the cheek. Where the capsule resists, a slender instrument, terminated like a serpent's tongue, passed by the pupil, and carried over the anterior part of the crystalline lens, divides it; and this body escapes by the opening."

After this part of the operation is finished, nothing more is supposed necessary by most operators; but, as the author has observed, blindness frequently occurs, in consequence of the inflammation of the capsule of the lens, constituting the affection styled the membranous cataract, he advises, in order to prevent this distressing accident, that immediately after the extraction of the lens, the same instrument should be directed to the posterior part of the capsule, with which a crucial incision should be made on that part. Immediately the vitreous humour occupies the place of the crystalline lens, and the eye remains clear, without a cloud.

Among other examples of the success of this method, M. Monnot relates the case of a domestic of M. Chalon, at Besançon, above sixty years of age, affected with a cataract in both eyes. On one of them he operated in the usual way; whilst, on the other, he likewise made an incision on the posterior part of the capsule. On finishing the operation, the patient recovered the sight in both eyes, but only retained it permanently in the eye in which that membrane had been divided.

By dissecting the eyes of patients who died blind, notwithstanding they had undergone the operation of extraction, the author discovered, that, in these cases, the privation of sight was solely imputable to a morbid thickening in the posterior part of the capsule; an effect which, he ventures to affirm, may be almost always avoided, by having recourse to the operative process here recommended.

Extract

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Extract from a Memoir, presented to the Medical Society of Paris, by M. VOISIER, *First Surgeon to the Hospital of Versailles, on a kind of displacing of the Uterus, in the Case of encysted Dropsy of the Ovarium and Fallopian Tubes, and on the Danger of wounding these Organs in those Operations which may become necessary.*

EXAMPLES, without number, may be found in authors of encysted dropsy of the ovaria, but there is no where found instances of encysted dropsy of the Fallopian tubes. If, however, the existence of this disease may have appeared problematical, it is sufficient, in order to conceive the possibility, to recollect that this tube is capable, under particular circumstances, to become excessively enlarged, so as to contain a grown fœtus, with its appendages. Two memoirs, inserted in the Memoirs of the Academy of Surgery, Vol. 2. give an idea of the displacing of the uterus, in the case of an encysted dropsy of one of the ovaria; the first is by Monteulieu, jun. On opening the body, it was found that there was an encysted dropsy of this kind; that the uterus was more raised into the hypogastric region than usual, and inclined to the side of the diseased ovarium. In the second observation, published by Laporte, the uterus was found equally inclined to the side of the right ovarium, in which the disease was situated. The same displacing throughout takes place in the cases of encysted dropsy of the Fallopian tubes. It is only necessary to recollect the organization of these appendages, and their connexion with the uterus, in order to conceive that, in the case of a diseased enlargement of these parts, sufficiently great to fill the abdomen, they should directly act on the body of the uterus, by displacing it, and exposing it to be injured by instruments, used in the various operations which such cases require, either with a view to obtain a palliative or radical cure. The following is an unfortunate instance of the truth of this observation.—A woman, aged forty years, was brought to the Hospital of Versailles; her appearance was that of a person afflicted with ascites. The surgeon, a man of intelligence, performed the operation of the paracenthesis on the left side of the abdomen, at the usual place; four quarts of fluid came off in the first instance with considerable freedom; after which the water stopped suddenly; in vain a stilette was introduced through the canula, in order to remove the obstruction.—The pain which it produced, and faint-

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ings, obliged the surgeon to withdraw it. The patient died three days after the operation. On opening the body, in the presence of the operator, there was found, instead of the right ovarium and Fallopian tube, a cyst sufficiently large to fill the entire abdomen, and which seemed formed by the enlargement of the coats and appendages of the uterus. This viscus was so raised in the abdomen above the superior margin of the pelvis, that it was pierced by the trocar in the operation. M. Dupuytren, to whom I communicated this observation, told me that he had frequently observed, in dead bodies, the kind of displacement in question. He has preserved three preparations illustrative of this fact. In this case the situation of the uterus is entirely deranged. The fundus uteri, dragged and raised by the cyst, inclines to that side the os tincæ is, therefore at the opposite side; and its edges, instead of being placed parallel to the symphisis of the sacrum and ossa ischia, become one superior, the other inferior. In this situation one of the sides corresponds to the junction of the sacrum with the vertebra, the other to the anteriour parietes of the hypogastrium. We conceive easily that this displacement may become still greater when a cyst, producing it, acquires a considerable volume; and when one of the Fallopian tubes contributes to form it, as we have seen in the case of the woman operated upon at Versailles. In this instance the uterus was placed in the abdomen, so as that one of its surfaces was glewed to the parietes of the cyst, and the other was turned to the lateral parietes of the belly, on the side opposite to the tumour. These observations may appear uninteresting to those who consider encysted dropsies of the abdomen as incurable, and the operations that are applicable, as useles, or even dangerous palliatives. It is the celebrated Dr. Hunter, (Medic. Obs. & Enq. vol. 2.) who favoured this opinion, although he was not ignorant that Dr. Bruheld had, in the year 1671, cured, by incision, an encysted dropsy, and which is accurately related in the Phils. Trans. 1724. Monro repeated, but unsuccessfully, this operation; but the person who has done the greatest honour to French surgery, the celebrated Le Dran, obtained a compleat cure of a dropsy of
s kind, complicated with schirrosity, by means of an
ision made into the most dependant part of the cyst,
ch became fistulous, and which was kept open for a
g time, (Mem. de l'Acad. de Chirurg. tom. 2.)

I. Petit, Radel professor, relates that, in 1774, he rally cured a woman who had laboured two years under an

an ovarian dropsy, by means of the operation for the paracenthesis, and proper treatment. Encycl. Method. Part. Chirur. tome ii. p. 132. Independent of these examples of radical cures, how many of palliative ones might be cited. I will confine myself to one observation by Sire-Jean, M. D. of Nancy. The girl, who was the subject of it, was submitted to the examination of all the physicians of that town. In consultation it was agreed that she had an encysted dropsy, but the kind could only be determined after death; the operation of the paracenthesis was performed fourteen times, and in consequence of which her life was preserved many years. But does there exist characteristic signs of encysted dropsies of the ovarium, and particularly of the Fallopian tubes, as well as of the displacement of the uterus, which they occasion? We must allow that the signs of this kind of dropsy described by authors, if they are considered separately, are rather equivocal; that the collateral circumstances which sometimes enable us to judge of their nature, may belong equally to a commencing extra uterine gestation. In the observation of Sire-Jean, we have seen that an entire college of physicians, although they suspected that the ovarium was the seat, and formed the cyst, confesses that he could not establish its real nature till after the death of the girl; this opinion is also confirmed by the 1023 Aphorism of Boerhaave, *Notabilis hydropis species quæ ovaria mulierum sæpe occupat difficulter cognoscitur et vix sine incisa cadavere.* Although it be very possible to confound an encysted dropsy of the Fallopian tubes with extra uterine pregnancy in this part, every practitioner will feel, that the fear of not distinguishing between these two cases cannot exist in the latter stages of this dropsy, where fluctuation, and the consequences of great compression, oblige us to have recourse to the operation of tapping. Besides, by a close examination of all the circumstances which precede and accompany the progress of the disease, we may know the seat of the disease in the affected side; but after what has been said, the displacement of the uterus necessarily existing in cases of dropsy of the ovaria and tubes, we may reckon the touch as the means most likely to throw light on the case. Thus then, in the case of encysted dropsy, suspected to depend on an affection of the ovarium and Fallopian tube, if to the symptoms common to all encysted dropsies of the abdomen, described in the works of the best authors, we find circumstances which prove that the affection began in the parts of generation, that its first de-

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vellopement was in the hypogastric region, where it had been preceded or accompanied by a painful sensation, should we not, in this case, look on this union of circumstances, when we add the absence of the uterus from the place it usually occupies in the pelvis, and the impossibility of reaching it with the touch, as a means of judging of the seat of the disease?

The following observation will serve to illustrate this assertion.

The widow C. 37 years of age, of a sanguineous temperament, addicted to violent passions, was delivered of her last child twelve years before; this birth was followed by a violent fever; during her convalescence she experienced in the left hypogastrium a painful sensation which did not afterwards quit her. A considerable irritation and pruritus about the labia produced excoriations which were taken for venereal, and the treatment which was the consequence rendered her situation still more unpleasant. From this period her belly swelled considerably, and became so voluminous that when consulted by her for the first time, in the eighth year of the Republic, I found her, to all appearance, labouring under ascites. The remedies usually employed in these cases were used without effect, and I determined to draw off the water by puncture. As the disease originally affected the genitals, and as she complained from the beginning of pain in the left side, which followed laborious parturition, the menses appearing regularly during the progress of the disease, but, particularly, as the swelling had begun in the left side, I suspected the existence of an encysted dropsy of the ovarium. With a view of ascertaining my suspicions, I had recourse to examination. In vain I sought after the os tincæ; I then determined to perform the operation on the left side of the abdomen. By means of the operation the cyst was completely emptied; the water that flowed was of the colour and consistence of ordinary urine. After the operation, by pressing on the left flank, a voluminous body was readily perceived; but, notwithstanding the evacuation of the waters, the neck of the uterus was imperceptible. During the months following this operation the patient felt better, but soon after the tumour filled again. The second operation was performed five months after, and near the first cicatrix. After evacuating the water, on withdrawing the canula, I placed in the cyst a small seton composed of a few threads; I recommended the patient to be constantly on the left side, in order to favour the evacuation of the water,

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water and prevent a new collection. The wound became as I wished, fistulous, and during eight months carried off constantly the waters as they were secreted. By persevering in this treatment, assisted by the use of aperients, tonics, and a suitable regimen, the woman became so far restored as to follow her usual occupations and even support the fatigue of a journey. Towards the beginning of the eleventh year the fistulous opening was allowed through negligence to close, on which the cyst began immediately to fill; I saw her towards the middle of last Brumaire (beginning of November.) The belly offered the appearance of an oblong tumour, extending itself from the left iliac region towards the umbilicus; I recommended the woman to undergo the same treatment which had already suceeded so well. She sent for me again at the end of four days; the tumor no longer existed, the water that formed it had been let off by an opening made by the patient herself with a bad penknife at the navel, and where the water had caused a considerable prominence; I recommended her to keep this open, and to observe the regimen already described. Towards the end of last Frimaire her situation got worse, and she died on the 8th of Nivose in consequence of an indigestion and a vomiting which it had occasioned. The following day the body was opened in the presence of my colleagues, M. Lamayran and Muhault, and the pupils of the hospital. On opening the abdomen the peritoneum was found every where connected to the viscera, the intestines were livid, and the omentum exhausted of its fat, and in many parts covered by a puriform matter. The uterus was raised into the hypogastrium above the superior margin of the pelvis, and inclined towards the left flank; the Fallopian tube of this side as well as the ovarium had entirely disappeared, but in their stead was observable a membraneous sac adhering firmly to the left side of the body of the uterus, and of which it seemed to make a part; the surface of this sac was thin, and in some places gangrenous, and extended to the navel, terminating at the small opening which the patient herself had made. This sac was narrower towards the navel, and larger towards the uterus, and occupied all the left lumbar and iliac regions, and contained about four ounces of a brownish flaky matter. The cavity of the matrix was, notwithstanding these appearances, perfect as well as the tube of the right side, but the ovarium was much enlarged, and contained many hydatids of the size of a filbert; without this increase of weight, which seemed to counterbalance the left side, it is probable

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probable that the displacing of the uterus would have been more considerable. We see from the appearances on inspecting the body of this woman, that the opinion that had been formed of the nature of her complaint was founded. If the uterus and its appendages were found so far displaced after death, how much greater must this have been before the first operation, when the tumor extended over a much greater surface of the abdomen?

It may be useful however to remark, that the means pointed out for ascertaining the nature and kind of dropsy in question, and the displacing which it causes, in order to avoid the danger of wounding it in operating, may be in some instances insufficient. In such a case, rather than run the danger of wounding, would it not be preferable to make the puncture at the navel rather than in the usual way?

The author concludes his Paper by arranging under four heads the reflections and observations which he has offered.

1. That encysted dropsy of the ovaria and Fallopian tubes may occasion the displacing of the uterus, and that in this case the uterus is raised out of the pelvis, and inclines from the side of the cyst which drags it.

2. That then the uterus is placed at the opposite side to that of the tumour, so that if it be the left ovarium and tube that form the cyst, the sac will be situated between the uterus occupying the right and left side of the integuments of the abdomen, and vice versa.

3. That if we have recourse to various operations used in such cases, without ascertaining the affected side, and the position of the uterus, we run a risk of wounding the uterus, and causing death.

4. That the means of avoiding this danger is to open the cyst on the side of the seat of the disease, or at the navel if the tumour extends to this part.

To Dr. BRADLEY.

Sir,

I Should not have again troubled you upon a subject, which has probably ere this exhausted your patience; but the fear lest my silence should be attributed to the consciousness of having acted with duplicity, induces me to offer a justification of my conduct. In a paper upon Apoplexy,

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plexy, inserted in No. 51, of the Med. Journal, Dr. Mossman, reverting to the dispute respecting the employment of emetics in that disease, observes (Dr. Cullen) "in his treatment of the disease, if he do not positively forbid the exhibition of emetics, (about the employment of which there has been so much Controversy) he very certainly does not recommend them. *A quotation, indeed, from the MS. lectures of Dr. Cullen, admitting of the use of emetics, has been communicated to us anonymously; but as it comes in this shape, it ought not to have been given at all, for it is not evidence.*"

Dr. M. appears to me to be extremely fastidious in making this objection, though I do not feel offended at the insinuation it conveys, because, to use a *homely proverb*, "Nothing hurts but the truth." But as it is incumbent upon me to remove every suspicion of deceit, I pledge myself to give Dr. M. any satisfaction he chooses respecting the accuracy of the quotation alluded to, which is as follows. "This (vomiting, Dr. Cullen observed) hath sometimes been practised with safety. It is difficult to explain how full vomiting is employed without increasing the congestion; yet here, facts are in part against our theoretic fears." From this quotation, I think, the Reader can only infer, that Dr. Cullen would not have *censured* the exhibition of an emetic under proper circumstances. If, however, the quotation be false, and if I have recorded words which Dr. Cullen never uttered, I may easily be contradicted by numbers of gentlemen who attended the Lectures of *our* "justly celebrated Preceptor," in the years 1787—88. With regard to my having written anonymously, it surely can be of no great consequence to the Reader, in the present instance, where equal obscurity would prevail, whether the real signature or a fictitious one be subscribed.

Notwithstanding what has been said upon the use of emetics in Apoplexy, and the respectable authorities which have been adduced in support of their safety, at least, Dr. M. adheres strenuously to his former opinion, that the practice is fraught with danger. It is remarkable also, that Dr. M. has not alleged any plausible reason for his deep-rooted antipathy; and that he has not informed us what share the emetics, exhibited in the two instances which he reports, were supposed to have had in accelerating the death of the patients. An emetic, Dr. M. observes, is an *awful instrument*; and so, it may be added, is an enema,

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yet it is frequently administered by the old ladies with great success.

Though I am ready to acknowledge the very beneficial effects derived from the prudent use of the lancet in Apoplexy, I cannot agree with Dr. M. in thinking that 'every man who has treated apoplexy must have witnessed *instant relief* by the operation of bleeding, (Medical Journal, vii. 208); neither can I admit with him, that 'the morbid phenomena of this disease, both before and after death, are so uniform, as to draw from *every author* a description very exactly similar.' Very different indeed are the histories of dissections in this disease; but I forbear entering into particulars, as I do not wish to have the Controversy renewed. *Requiescat in pace.*

Before I quit the subject, however, I cannot refrain from expressing my disapprobation of the slighting manner in which Dr. M. speaks of Riverius and Van Helmont.—"There is (he says) a stateliness, I think, in quoting such authorities as Riverius or Van Helmont; and there is a want of fairness in deducing from the opinions of those men, any sound practical inferences." Does Dr. M. mean, that we should not consult medical records; and that the valuable observations which our Predecessors have bequeathed to us, should be neglected, as useless? Surely, some respect is due to age, some deference to those who have removed the thorns which obstruct our progress. The inordinate praise which some have lavished upon the antients, has been justly ridiculed; but pedantry appears to me to be more excusable, than that democratic spirit which endeavours to strip them of their justly-acquired honours. Indeed, when I perceive this spirit of detraction prevailing to a great degree, I am tempted to a certain little fable of Esop's, respecting the fox in the vineyard. I do not wish to offend Dr. M.; neither do I presume to inform him of the characters of the men whom he treats so disrespectfully. Riverius, it is well known, was no disgrace to a Professor's chair in an University which has ever boasted of her learned men. He was an excellent observer; and the remedy which still retains his name, and which we are daily obliged to have recourse to, is no despicable memorial of his practical skill. The treatment which the memory of Van Helmont has received, ought to caution physicians from indulging in idle speculations. It has been too much the custom for the witlings of succeeding ages, to use this venerable name as a *butt* to shoot their puny shafts at; but men of discernment have done justice

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to his genius, his learning, and his industry. "The friend of truth, says a learned writer, (Sprengel Geschichte der Arzneykunde) contemplates with pleasure the writings of a man, who, though addicted to the superstitions of his age, detected innumerable theoretical and practical errors; and published observations, which later physicians, from a want of better information, have considered as recent discoveries. Helmont may be placed by the ignorant in the same rank with Paracelsus, and be despised; but impartial History will assign the wreath of merit to this neglected physician." The great and good Baron Haller bestows on Van Helmont a similar eulogium; he calls him "vir acuti ingenii, in detegendis aliorum erroribus acris, in colligendis eventis suæ causæ faventibus ingeniosus, non expers anatomes, &c." Biblioth. Med. Pract.

R. WINTERBOTTOM, M. D.

South Shields, Aug. 30, 1809.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

ON reading over the arguments and opinions respecting the late Epidemic, published in your Journal, I cannot fail being surprised to find such opposite sentiments; one party believing it to be derived from the air; the other, that it is contagious, or communicable from person to person. Soon after the commencement of this disease I formed my own opinion from what I thought accurate observation, and I have had no reason to alter it. It appeared in this town and neighbourhood the beginning of March, in several families nearly at one and the same time, and disappeared as suddenly, the latter end of May. I took notice that, at first, one or two in a numerous family would have it, and the rest escape; but after the disease became more general, it put on a more contagious aspect, which I conceived was caused by a greater number of Constitutions being attacked, generating thereby *another morbid influence, very different from the first.* For, I believe it cannot well be denied, that contagious effluvia may thus be generated, and that also some particular constitutions are more prone to run into those states productive of it, than others. Upon this I grounded my opinion, and I am clearly convinced that the advocates for original Contagion

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cannot establish their point; for where it was *apparently* contagious, it was so by accident; the poison already generated in some constitutions had diffused itself, breaking down that healthy barrier which hitherto had resisted the atmospheric influence, and thereby received the epidemic under a new form; and, in this manner, we can easily account for the diversity of opinions that have been advanced in this interesting controversy. In regard to the treatment, some have found the use of the lancet altogether inadmissible, whilst others have repeated the operation with evident good effects. How can we reconcile this contrariety in practice, if we are to suppose that in both instances the patients were labouring under the sedative effects of human contagion?

I do not in the least flatter myself, that any thing which I have now advanced will meet the ideas of those gentlemen who have published such direct and opposite sentiments; but as I am clearly of opinion that the late epidemic, termed Influenza, was no more contagious *in itself* than a common catarrh, I consider it as a bounden duty I owe to you, Gentlemen, as a Reader of your Journal, and to the Public, to make those opinions known, which have produced such complete conviction in my own mind.

I am, &c.

Alcester, Nov. 12, 1803. T. PURTON.

P.S. As the cause which produced these changes in the atmosphere, appear to have operated very generally over this side of the globe, having its origin many degrees eastward of us, we cannot reasonably suppose that human effluvia floated in the air, and was *rapidly* wafted to us from countries so remote; it is the rapidity with which it passed from one side of the island to the other, which completely does away the argument in favour of contagion; and, indeed, as we are led to believe, from great authority, that when contagious matter is conveyed by the air, it has *never been found to act far from the sources from whence it arose*, (Cullen, First Lines, vol. 1, p. 82) how can we suppose for a moment that the late epidemic had its origin from human contagion, as we well know that it appeared in France and other countries before it made us a visit?

Account

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Account of Diseases in an Eastern District of London, from November 20, to December 20, 1803.

ACUTE DISEASES.		Amenorrhœa	12
Pneumonia	3	Leucorrhœa	10
Peripneumonia Notha	7	Dysuria	4
Dysenteria	5	Hysteria	3
Variolæ	5	Cephalalgia	8
Rheumatismus Acutus	4	Paralysis	3
CHRONIC DISEASES.		Vertigo	2
Tussis	19	Rheumatismus Chronicus	20
Tussis cum Dyspnœa	17	PUERPERAL DISEASES.	
Hydrothorax	3	Menorrhagia Lochialis	7
Phthisis Pulmonalis	4	Ephemera	8
Hepatitis Chronica	2	Dolores post Partum	4
Ascites	3	INFANTILE DISEASES.	
Anasarca	5	Ophthalmia Purulenta	2
Diarrhœa	9	Herpes	3
Enterodynia	7	Vermes	2
Gastrodynia	5	Dentitio	4
Menorrhagia	7		

The state of diseases has of late been more favourable than usual. Fewer of those complaints have appeared which in general occur in the autumnal months. Coughs and catarrhs, difficult respiration, and other affections of the chest have indeed increased in number, and have been attended with an aggravation of symptoms since the late alteration in the state of the atmosphere.

The subject which engages the principal attention of medical men at present, is the state of variolous contagion. The small-pox has lately appeared in a much larger number of instances than has been observed for a considerable time. This fact is very well ascertained by the report of the weekly bills of mortality, in which the number of deaths occasioned by this disease is very considerable; and also by the observation of medical men, who in the course of their practice have met with an unusual number of cases. This disease has not only occurred very frequently, but has been attended with aggravated symptoms, and has often proved fatal. That the small-pox should prevail in so considerable a degree, when such means are employing for the prevention of it, may excite some surprise. It must be recollected, however, that notwithstanding the very extensive trial which has been made of the Vaccine Inoculation in every part of our own country, and in other parts of the

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globe, and the uniform success which has attended it, there is still a considerable prejudice against it. That requests are frequently made for inoculation with variolous matter, is known by private practitioners of medicine; and especially by those whose connection with public institutions gives them a still farther opportunity of observing the fact.

How desirable the removal of this prejudice is must appear to every reflecting person, to whom it must occur that by the preference of the variolous to the vaccine inoculation, the former disease is propagated, and that the public are in continual danger of suffering by a malady which has proved one of the most loathsome and dangerous of those that have ever visited the human frame.

CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

Richerand's Elements of Physiology, concluded.

In the subject of the fourth chapter, Respiration, the reader will naturally expect a very copious addition to the labours of Haller, as many of the most interesting facts relative to this function have been discovered or elucidated since the publication of the Primæ Lineæ.

The mechanical powers by which the dilatation of the thorax is effected, are first noticed by Mr. Richerand. He very properly considers the diaphragm as almost the only agent in common dilatation of the thorax, and the muscles of the chest as only auxiliary.

"When any cause whatever renders inspiration difficult, prevents the diaphragm from descending towards the abdomen, or in any other manner impedes the motion of inspiration, the intercostal muscles not only evidently act to induce a dilatation of the thorax; but also several other auxiliary muscles, as the scaleni, subscapulares, pectorales, serrati majores, latissimi dorsi, in contracting raise the ribs, and increase the diameter of the thorax in several directions;

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directions; the fixed point of these muscles should then be their movable part, because the cervical spine, the clavicle, scapula, and humerus, are fixed by other powers which it would be needless to enumerate. Any person who observes the access of a convulsive asthma, or the paroxysm of a severe cough, may easily appreciate the importance and action of these auxiliary muscles."

The history of the chemical changes produced by respiration on the air inspired, and on the blood in the arterial and venous systems, together with the accruing phenomena of animal heat, is a fair subject for the proof of the Author's research and ability; we shall therefore attend to it with more minuteness. The following is the Author's description.

"Each time the thorax dilates in an adult man, from thirty to forty cubic inches of atmospheric air enter into the lungs; and when in a state of purity, composed of 73 parts of azot, 27 parts of oxygen, and $\frac{1}{100}$ or $\frac{2}{100}$ of carbonic acid.

"After the atmospheric air has remained some moments in the pulmonary structure, it is expelled by the effort of expiration; but its quantity is diminished: it is reduced to thirty-eight inches. Its composition is not the same: there are found, certainly, $\frac{73}{100}$ of azot, but the oxygen, its vital and respirable part, has suffered a great diminution; its proportion is only $\frac{14}{100}$: carbonic acid constitutes the remaining $\frac{13}{100}$, and sometimes one or two parts of hydrogen gas are found. It is likewise altered by the mixture of an aqueous vapour, which condenses in cold weather in passing out through the nostrils and mouth: it is known by the name of the humour of pulmonary exhalation. These changes, compared with those which the blood has suffered in its passage through the lungs, manifestly indicate a reciprocal action of this liquid and the oxygen of the atmosphere. The dark venous blood, slow of coagulation, and separating much serum, loaded with hydrogen and carbon, possessing only thirty degrees of heat, gives off to the oxygen of the atmosphere its hydrogen and carbon, to constitute the carbonic acid and pulmonary vapour; and as oxygen cannot enter these new combinations without disengaging a portion of caloric, which rarefies it into gas, the blood seizes this heat, now liberated with so much greater facility as it proportionally loses its hydrogen and carbon; and agreeably to the ingenious experiments of Crawford, its capacity for caloric augments in the relation of 10 : 11.5.

"The blood, in relinquishing its carbon, which, combined with oxygen, forms the carbonic acid given off in expiration, changes its dark and almost violet colour to a bright vermillion red; its consistency is increased by the dissipation of its hydrogen and aqueous parts; besides, as it absorbs a certain quantity of oxygen, it becomes frothy and lighter, its concretibility and plasticity increase, and on coagulation less serum is separated.

"The blood, in passing through the lungs, is deprived of hydrogen and carbon, and, in becoming arterial, is loaded with oxygen and caloric. In proportion to its distance from the heart, it is de-

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prived of its oxygen and its caloric, which are formed into oxyds of hydrogen and carbon; these, by a fresh addition of oxygen, when under the influence of atmospheric air in the lungs, form water and carbonic acid.

"This theory of the disoxygenation of blood, in passing through sanguiferous vessels, acquires a new degree of probability from the recent discoveries on the nature of the diamond. This body is the only pure carbon, and the substance to which chemists give this name is an oxyd of carbon, deriving its black colour from the oxygen with which it is combined. Before these experiments, it was difficult to determine the particular state of carbon that forms such a considerable part of venous blood.

"We have not yet precisely determined the respective quantities of oxygen absorbed by venous blood, and of the same oxygen employed to disengage the hydrogen and carbon in the lungs, to form the water and carbonic acid.

"Is the carbon in venous blood only combined with oxygen, or united with hydrogen, forming an hydro-carbon? It seems to me more probable that the oxygen absorbed, in uniting with the hydrogen in every part of the body, produces the water that dilutes the venous blood, renders it more fluid, and abounding in serum, than arterial blood; whilst, in uniting with carbon, it forms an oxyd that gives this blood a dark colour, constituting one of its principal characteristics. The water when in the lungs, which are true secretory organs, exhales, dissolved by the air, and forms pulmonary transpiration or exhalation; the oxyd of carbon, more completely burnt by a superaddition of oxygen, constitutes carbonic acid, which gives the air passed by expiration the property of precipitating lime-water."

A more confused and slovenly account of this most interesting process, we will venture to say, was never given by any one who professed to condense in one Treatise, all the elements of physiological science. Scarcely a single experiment is mentioned, on which the theory is founded; no facts, no data, no calculation; in short, nothing that indicates any research even into those sources which must be peculiarly obvious to French writers. Surely Lavoisier, Laplace, Jurine, Hassenfratz, and many others, would have furnished him with abundant matter, without the toil of research into foreign writers, of which he appears so profoundly ignorant. Neither is the meagre, scanty information which he does bestow entirely accurate. The quantity of carbonic acid stated to be produced is that of successive inspirations of the same air, not of a single inspiration, as would be inferred by the context. The following is another specimen of equal inaccuracy:

"Arterial blood becomes venous by parting with its oxygen when any cause suspends or retards its course, as proved by the following experiment of J. Hunter. He tied the carotid of a dog in two places, at about four inches distance; the blood which came out of that portion of the artery between the ligatures, when opened several

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ral hours afterwards, was coagulated and dark like that of the veins."

If the author had not previously resolved that arterial blood should become venous *by parting with its oxygen*, he would never have made this inference from Hunter's experiments, which shews only that arterial blood *remaining at rest* within the vessel assumes a venous colour.

The Section on Animal Heat is still more defective than the former, nor is its connection with respiration traced with any degree of ability or precision.

The fifth Chapter treats of secretions, and particularly of the blood, the source of all the secretions. The latter is described more chemically than physiologically, and hence many interesting particulars relative to the coagulation of blood are entirely omitted.

Of the secretions themselves, only the fat is described individually; the others are noticed in a general way along with the organs which separate them, and the secretory glands.

A trifling chapter on Nutrition succeeds, which the author appears to dispatch with great haste, that he may proceed to a long and important chapter, the subject of which is Sensation.

The order of description is, the sensations of sight, sound, smell, taste, and feeling, with their corresponding organs, the nerves, the brain, and the general functions of the nervous system. As a favourable specimen of the author's anatomical descriptions, we shall give part of that of the eye.

"The globe of the eye may be considered as a dioptric machine placed before the retina, destined to refract luminous rays, collect them into a focus, which strikes one point of this nervous membrane, exclusively adapted to receive the impression. One external, membranous, firm, and consistent covering sustains all its parts. Next to this membrane, called sclerotic, is found the choroid, a black tunic that lines the interior surface of the sclerotic, and causes the eye to be a *camera obscura*. At the anterior part of the globe the sclerotic leaves a circular opening, in which the transparent cornea is received; about the twelfth part of an inch distance from this convex segment, in the anterior aperture of the sclerotic, is found the iris, a membranous system, perforated by a round aperture (the pupil), which dilates or contracts conformably to the expansion or contraction of the iris.

"At a very small distance behind the iris, about the union of the anterior quarter of the globe of the eye with the remaining three quarters, posterior and opposite the opening of the pupil, there is a lenticular body, enclosed in a membranous capsule, invariably fixed in the place it occupies by its adherence to the membrane of the vitreous humour.

"Behind the crystalline lens the three posterior quarters of the cavity of the eye are filled with a viscous, transparent humour, enclosed in the cells of an extremely fine membrane, called a hyaloid. This vitreous humour constitutes about two-thirds of the

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sphere from which an anterior third might have been taken off; it is on the surface of this membrane and humour that the pulpy expansion of the optic nerve, called retina, is distributed, which adheres also as firmly to the choroid and sclerotic membranes.

"The globe of the eye being almost spherical, this difference of its diameters is very inconsiderable; the diameter from the anterior to the posterior part, is ten or eleven lines; the transverse and vertical diameters are not quite so long. In the space formed by the antero-posterior diameter that forms the visual axis, are found, in passing from before, backwards, the cornea, the aqueous humour, in the anterior chamber, the iris, and its central perforation, the aqueous humour of the posterior chamber, the chrystalline lens, surrounded by the ciliary processes, then the vitreous humour enclosed in the hyaloid membrane; and behind these transparent parts of the eye, through which the luminous rays pass in approaching the perpendicula, are, the retina, that receives the impression, then the choroid, the black coat, pigmentum nigrum, which absorbs the rays that penetrate through the fine retina; and, lastly, the sclerotic, perforated for the entrance of the optic nerve into the globe of the eye.

"The cornea enclosed in the anterior space of the sclerotic, like the glass of a watch in the frame of its outside case, is about the third of a line in thickness; it forms the segment of a smaller sphere before the eye, in addition to the anterior part of a larger sphere; behind it is the aqueous humour that fills what are called the chambers of the eye: these are distinguished into an anterior or larger space, limited by the cornea before and the iris behind; and into a posterior or smaller space, separating the crystalline lens from the iris, the posterior surface of which is covered with a black substance called *uvea*."

In the latter part of this chapter, Vicq d'Azyr and Condillac have furnished some masterly anatomical descriptions, and acute metaphysical remarks.

In the eighth chapter the phenomena of motion, and of all the combined action of the voluntary muscles, are described; and in general, in a more satisfactory and instructive way than perhaps any other subject in the whole volume. The idle chemical theory of Girtanner, to explain muscular motion, meets with more applause from our author than we expected. A short notice of Galvanism is also introduced in this part.

In the succeeding chapter on the voice, the following remarks on ventriloquism may give some information:

"There resides in the ci-devant Palais Royal, in the coffee-house of the Grotto, a man who can maintain a dialogue with such accuracy, that we should be induced to believe two persons were actually engaged in conversation at a certain distance from each other, the accent and voice of whom seem to be entirely different. I have observed that he does not inspire when speaking from the belly, but that the air passes in smaller quantity from the mouth and

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and nostrils than when in ordinary speech. Every time that he exerts this unusual peculiarity he suffers distension in the epigastric region; sometimes he perceives the wind rolling even lower, and cannot long continue this exertion without fatigue.

"At first I had conjectured that a great portion of the air expelled by expiration did not pass out by the mouth and nostrils, but was swallowed and carried into the stomach, reflected in some part of the digestive canal, and gave rise to a real echo; but having afterwards more attentively observed this curious phenomenon in M. Fits-James, who represents it in its greatest perfection, I was enabled to convince myself that the name *ventriloquism* is by no means applicable, since the whole of its mechanism consists in a slow, gradual expiration, drawn in such a way that the artist either makes use of the influence exerted by volition over the muscles of the parieties of the thorax, or that he keeps the epiglottis down by the base of the tongue, the apex of which is not carried beyond the dental arches.

"He always makes a strong inspiration just before this long expiration, and thus conveys a considerable mass of air into the lungs, the exit of which he afterwards manages with such address. Therefore repletion of the stomach greatly incommodes the talent of M. Fits-James, by preventing the diaphragm from descending sufficiently to admit of a dilatation of the thorax, in proportion to the quantity of air that the lungs should receive. By accelerating or retarding the exit of air, he can imitate different voices, and induce his auditors to a belief that the interlocutors of a dialogue, which is kept up by himself alone, are placed at different distances; and this illusion is the more complete in proportion to the perfection of his peculiar talent."

No particular remarks are suggested by the next chapter on Generation.

The work concludes with the history of ages, temperaments, varieties of the human species, death, and putrefaction. Remarks on temperament are always entertaining, as they afford much scope for elegant description, and the sallies of the imagination. Without commenting on the soundness of our author's observations, we cannot but smile at the examples or proofs which he brings in illustration. Thus, the *sanguineous* temperament is exhibited, physically, in the statues of the Antinous and Apollo; morally, in the character of Mark Anthony and Alcibiades; the *bilious* or *choleric*, in the haughty spirits of Achilles, Alexander, or Julius Cæsar; the *pituitary*, in the mild, conciliating Atticus, the common friend of irreconcilable enemies. But he does not give his proofs that Atticus had a fair skin, flaxen or sandy hair, and a slow pulse; Achilles, an excessive perfection and precosity of the liver, to the prejudice of the lymphatic and cellular systems; and Alexander, or Mahomet, a hard pulse, yellowish brown skin, and firm muscles.

The work before us will, doubtless, instruct most learners, who take the pains to study it; but we are compelled to observe, that it

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is not what it professes to be, a complete outline of Physiology, according to the present state of human knowledge, being defective in those few parts in which extensive learning was required to collect widely scattered materials, and full only in those in which the Author could profit largely from the *finished* labours of his predecessors.

The Translator appears to have executed his task with general fidelity and elegance. A few errors have occurred to our notice, one of which (phosphat of lime for phosphat of iron) very unfortunately makes nonsense of an explanation of the red colour of the blood; and, for the convenience of the English reader, the degrees of Reaumur's thermometer ought universally to have been expressed by their equivalents on the English scale.

Observations on the anti-phthisical Properties of the Lichen Islandicus, or Iceland Moss; comprehending explicit Directions for the making and using such Preparations of the Herb and Auxillaries, which experience has proved best adapted to the Cure of the different Species of pulmonary Consumptions, of Great Britain; by Rich. Reece, 8vo. pp. 32. 1803.

The principal object of this short pamphlet appears to be, to suggest what the author considers as improvements upon Dr. Regnault's mode of employing the lichen. These are founded on a division of the properties of the plant into the bitter and the mucilaginous parts, and combining them, according to the indications, with other auxillaries.

"The Lichen Islandicus (says Mr. R.) possesses considerable medicinal and dietetic properties; the latter residing in a strong mucilage, which affords a regimen well adapted to support the debilitated frame of phthisical patients; and the former in a bitter, which, in proper doses, is evidently of an anodyne nature, which powerfully allays cough; and, unlike opium, at the same time facilitates expectoration, abates hectic fever, quiets the system, without constipating the bowels. It is likewise tonic, which strengthens the organs of digestion; and different from any other of that class, without increasing the action of the heart and arteries:—the union of these properties unquestionably affords a most valuable remedy in the treatment of pulmonary consumption.

"The bitter portion of this herb, (which must be considered the principal agent in the relief of the phthisical symptoms) is readily imparted to boiling water by infusion; but by the long boiling necessary to extract its mucilage, this quality is nearly destroyed.—Quarin, sensible of this circumstance, directs the herb to be boiled in water only half an hour, which extracts but a small portion of the mucilage, and contains its medicinal virtues, unimpaired; and Hartmann recommends two drachms of the herb to be boiled in a pint of milk a short time, which is ordered to be drank off in a morning; and this form has been most followed by the physicians

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in London; but with patients affected with dyspeptic symptoms, this medium often proves too heavy."

Our observations do not confirm these assertions; we do not find the bitter quality of the herb destroyed by the boiling necessary to extract its mucilage; if the boiling be properly conducted, which should be only digesting in a boiling heat, the bitter will not be diminished. The practice imputed to the physicians in London, of recommending a slight boiling of the plant in milk, is contradicted by our information, and we should be surprised to find any such practice generally prevalent in the metropolis. If, however, medical men should be desirous of combining the virtues of the lichen with a milk diet, they can be at no loss to reconcile them to dyspeptic habits.

The author agrees with Dr. R. p. 6, in recommending a full and free use of the plant, both as diet and medicine; but he prefers a flour, or, as he terms it, a *farina*, made from the herb, which he thinks may be converted into the suitable preparations more easily than the plant itself. This indeed is the practice of the Icelanders, who make it a principal article in their soups or broths, and often make bread of it; but their mode of grinding it, or any other that could be employed in private families, is too troublesome for general use. We have therefore been in the habit of recommending the digestion in a boiling heat for two or three hours; and when the liquor has been strained, as much of the herb is to be rubbed thro' the sieve as can be made to pass, and mixed with the liquor. By this process all the virtues of the plant will be obtained, without the trouble of grinding it; the danger of sophistication, to which the temptation is so great, and the detection so difficult when the meal is purchased ready ground, will also be avoided. Though Mr. R. may prepare it faithfully, others may adulterate; and there is no exclusive privilege to guard us against frauds.

We are happy to find that Dr. Regnault has succeeded in drawing the public attention so generally to this subject, and that he has been called upon for a second edition of his Essay. In consequence of such request, we understand he has made considerable additions and improvements both in the pathology of consumption and the manner of treating its different stages; and that the work will make its appearance in the course of a few days.

The London Practice of Midwifery, or a Manual for Students. London, 1803.

This work professes to be a System of Midwifery, founded upon the London practice, but we have authority to say that it is only a surreptitious copy of the notes taken at the Lectures of an individual Teacher of Midwifery in London. We wish that we could even recommend it as such; but the whole work bears evident marks of haste and inaccuracy. The very names of writers are falsely spelt, as Peuso for Puzos, Bourdelois for Baudeloque, &c.

Words

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Words are given as Ambrose Paré's which are not to be found in his works; and Haller is made to vouch for opinions, which he never entertained. Dr. Johnson is quoted as the author of experiments which he never made or thought of; experiments of the late Mr. Hunter are related in the most inaccurate manner; and experiments of Spalanzani are positively attributed to Mr. Hunter. Some passages may be found, which are absolute nonsense, and such as no Teacher could ever have delivered; for example, "The menstrual discharge from the uterus serves as a nidus, in which the ovum is nourished."

We have noticed these among an infinite number of errors in the physiological part.

Innumerable mistakes are to be found in the practical part of this work, which are more important, because they are capable of doing more mischief, and of misleading young practitioners. In the rules for the application of the forceps, the *sides* are mistaken for the edges of the instrument, so that if it was applied by the rules laid down infinite harm may be done.

On the whole we must repeat, that the book is a very bad compilation from the notes hastily and very incorrectly taken by a young student, at the lectures of an individual teacher, and is too incompleat to serve as a practical guide to those for whom manuals of this kind are intended.

MEDICAL AND PHYSICAL INTELLIGENCE.

[FOREIGN AND DOMESTIC.]

In the Medical Journal, published at Montpelier, we find two cases of children poisoned by the use of bitter almonds; in one, the person had eaten them heated in a copper vessel; in the other, the child had been made to drink the milk of bitter almonds as a remedy against worms.

It is rather singular, the variety of opinions that exist on the pernicious effects of these bodies; some maintaining them to be harmless when used by man, while they are acknowledged to be highly deleterious to other animals, particularly birds. The learned Prof. Murray made many experiments on different animals, which prove their poisonous qualities, but in different degrees in different animals. In those animals, the subjects of his experiments, as well ai in the cases of the children, the effects of drunkenness were very remarkable. On the other hand, Fred. Hoffman asserts, Medic. Ration. System. vol. 1. that their bad effects are but

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but little observed in the human subject, but, like nux vomica, highly so to other animals; he instances the dog, cat, pigeon, &c. The experiments of Schrader, a distinguished chemist of Berlin, are remarkable. He found that the prussic acid was contained in laurel water, in the infusion of peach leaves, in bitter almonds, as well as many other vegetables; and desirous to ascertain if this acid produced the same effects on the animal economy as the distilled laurel water, bitter almonds, &c. he gave a sparrow some drops of it, which was immediately killed. The same author asserts, that birds respiring the vapours of prussic acid, die as quickly as those exposed to the smell of laurel water. If bitter almonds contain prussic acid, and if this acid be mortal, may we not conclude that their pernicious effects depend on the prussic acid which they contain?

Professor HUFELAND, first physician to his Prussian Majesty, at Berlin, highly praises the external use of *flores zinci* in excoriations and cutaneous ulcerations, and has employed them with great success in painful excoriations of the nipples, in ulcerated herpes, and in the obstinate remains of an inveterate itch. This remedy diminishes the pains, is exsiccant, and healing within a short time, without being attended with any danger, which we have always to dread from the external use of lead and its preparations. He generally makes use of the following unguent: ℞. Ungt. pomat. unc. j. flor. zinci semin. lycopod. aa dr. ʒ. M. This ointment he orders to be applied three times a day, spread on pieces of soft linen. He relates a case of a child, one year old, which had suffered from its birth an herpetic eruption, which grew so bad, that the child was covered all over with sores, attended with much pain, by which it was entirely emaciated. Antimonials, mercurials, baths, lime water, and a solution of sublimate, externally applied, were used without any avail, and even seemed to increase the complaints. At last he applied the ungt. flor. zinc, and had the satisfaction to see this remedy mitigate the pains, and heal the sores, so that within a fortnight no ulcerating place remained, and the child at present enjoys the best health.

The same gentleman recommends the following tincture of digitalis purpurea, to which he gives the name of tinctura digitalis aquoso ætherea, and in which all the efficacious particles of this plant are concentrated. Take three ounces of very good digitalis, well dried and cut in small pieces, macerate them with eighteen ounces of distilled water for twenty-four hours, now and then shaking the vessel, and then strain, pouring on the herb distilled water, till it passes off without colour and taste. Evaporate the liquor that is thus obtained in the water bath, till three ounces remain. The herb that has been in this manner extracted, being carefully dried, is infused with six ounces of spiritus sulphurico ætherеus

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ætherens (liquor anodynus) and after the space of twenty-four hours it is expressed, strained, and added to those three ounces of liquor. This tincture contains the extractive, resinous, albuminous and acrid matter of that medicinal plant.

Mr. Kelch of Königsburg, has made some remarkable Galvanic experiments on the body of a criminal who was beheaded for a capital crime. The pile of which he made use consisted of sixty-two plates of zinc and copper, which was combined with another of fifty-two strata. The head immediately after the execution was placed on a table, and while the spinal marrow, which was cut through at the sixth vertebra colli, was touched with the conductor of the zinc pole, the conductor of the copper pole was applied to the left upper eye-lid, and immediately the eyes, which were only half shut, opened themselves, in which state they remained as long as the chain was shut. The eye-lids not only contracted themselves, but shewed a tremulous motion, which ceased immediately after removing the conductors. The contractions were still stronger, on moistening the eye-lids with a solution of sal ammon. No change could be produced either in the iris or in the pupilla. On touching the ala nasi and the septum mobile with the copper pole conductor, the ala distended itself and became tremulous, the septum and the point of the nose were drawn downwards. By touching the middle part of the upper lip it approached to the under lip, but not so much as to shut the half-open mouth. On applying the conductor of the copper-pole to the corner of the mouth, the upper lip was contracted, while the under lip remained immovable; the tongue shewed undulating motions when touched with the conductor of the copper pole. Similar contractions followed in the temples and cheeks. On touching the spinal marrow, and any part of the face, the fore part of the neck came into a sudden motion, resembling the act of swallowing, which lasted some time after having removed the conductor. All these experiments were several times repeated, and continued for above half an hour. On the left arm, a place two inches large of the musculus biceps was laid bare, and having touched the spinal marrow with the conductor of the zinc pole, and that place with the copper pole conductor, the muscle was suddenly contracted; the fore arm turned itself, moving at the same time towards the body, and likewise the upper arm made a turning motion, drawing near the body; but as soon as the conductor was removed, the arm fell back into its former situation. On bringing the spinal marrow and the scrobiculus cordis within the Galvanic chain, the latter part, with all the integuments of the belly, began to raise itself; the thorax contracted, forming a convexity; the arms became stiff, were raised and moved towards the trunk; the shoulders were lifted; the upper part of the spine was bent, moving somewhat down the table; but when the Galvanic chain was opened, all these motions disappeared.

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peared. On repeating the experiment, the same motions ensued, except the latter. The muscles of the belly likewise showed contractions. The large and small intestines could by no means be excited to contract, nor yet the stomach, though they had previously been moistened with a solution of sal ammon. While the zinc pole remained in combination with the spinal marrow, the conductor of the copper pole was applied to the abdominal surface of the diaphragm, and to the processus ensiformis of the sternum, by which it was considerably contracted, but a motion of the heart could not be perceived. Touching the pericardium produced not any contraction; but on opening it, and touching the heart on the anterior part of the right ventricle, some slight motions at the apex cordis, and where the large blood-vessels enter the ventricles, and at the right auricula, could be produced. The heart was taken out of the body, and being laid on the hand of a gentleman who assisted at the experiments, the zinc conductor was introduced into the right ventricle, while the apex cordis and the surface of the left ventricle was touched with the copper conductor, by which means considerable contractions, and particularly an alternate contraction and distension of the orifice of the right ventricle, where the arteries enter it, and of its auricle were produced, which even continued for a few minutes after having removed the conductors. The limbs having become cool during the former experiments showed but slight contractions. On laying bare and galvanising the musculus Sartorius, the motions of the thigh were more considerable. A cutaneous branch of the crural nerve, touching with its inner surface the musculus sartorius was prepared and combined with a bare place of the muscle of the other limb; the nerve contracted, while slight motions were at the same time perceived in that muscle, to which the zinc conductor had been applied, and the place of the nerve which had been touched with the conductor became the next day light brown, and dry, while the remaining part was soft, moist, and of its natural colour.

St. Thomas's and Guy's Hospitals.

The Spring Course of Lectures will commence as usual in the beginning of February, viz.

Anatomy and Operations of Surgery, by Mr. Cline and Mr. Cooper. — Practice of Medicine, by Dr. Babington and Dr. Curry. — Chemistry and Experimental Philosophy, by Dr. Babington and Mr. Allen. — Theory of Medicine and Materia Medica, by Dr. Curry. — Midwifery, and Diseases of Women and Children, by Dr. Haighton. — Physiology, or Laws of the Animal Œconomy, by Dr. Haighton. — Principles and Practice of Surgery, by Mr. Cooper.

Sometime in the Spring, Mr. Coleman, Professor at the Veterinary College, will give a Course of Lectures on the Veterinary Art.

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These Lectures are so arranged, that no two of them interfere in the hour of attendance; and the whole is calculated to form a complete Course of Medical and Surgical Instruction.—Terms and other particulars to be learnt of Mr. STOCKER, Apothecary to Guy's Hospital.

THEATRE of ANATOMY, Blenheim Street, Great Marlborough Street.

Mr. BROOKES will commence his Spring Course of Lectures on Anatomy, Physiology, and Surgery, on Saturday the 21st of January, 1804, at two o'clock.—The Dissecting Rooms are open from eight in the morning until two, where Mr. Brookes attends.

Dr. CLARKE's Spring Course of Lectures on Midwifery and the Diseases of Women and Children, will begin on Monday, January 30, at a quarter past ten o'clock, at the house of Dr. Clarke, No. 1, New Burlington Street. These Lectures are not given in the summer.

Dr. BATTY's Lectures on Midwifery, and the Diseases of Women and Children, will begin on Monday, Jan. 30, at half past ten o'clock, at his house in Great Marlborough Street.

Mr. TAUNTON's Spring Course of Lectures on Anatomy, Physiology, and Surgery, will recommence on the 21st day of January, 1804, at eight o'clock in the evening; and the Lectures will be continued every Tuesday, Thursday, and Saturday, at the same hours. Particulars may be known by application to Mr. Taunton, No. 10, Paternoster Row.

Mr. SYER, Successor to Dr. Pole, will commence his Second Course of Winter Lectures on the Elements and Practice of Midwifery, at his Lecture Room, 102, Leadenhall Street, on Monday, Jan. 8, 1804, at six o'clock in the evening.

Dr. KISBY, of Edinburgh, proposes this Winter, or in the ensuing Spring, to deliver a Course of Lectures on the Principles and Practice of Medicine.

TO CORRESPONDENTS.

S. J's. Paper on the Means of preventing Contagion will appear in our next Number.

Philomedicus is postponed for want of a proper Signature.

Communications are received from Dr. Aberdour, Dr. Scott, Mr. Marson, Mr. Boswell, Mr. Ward, and Mr. G. N. Hill.

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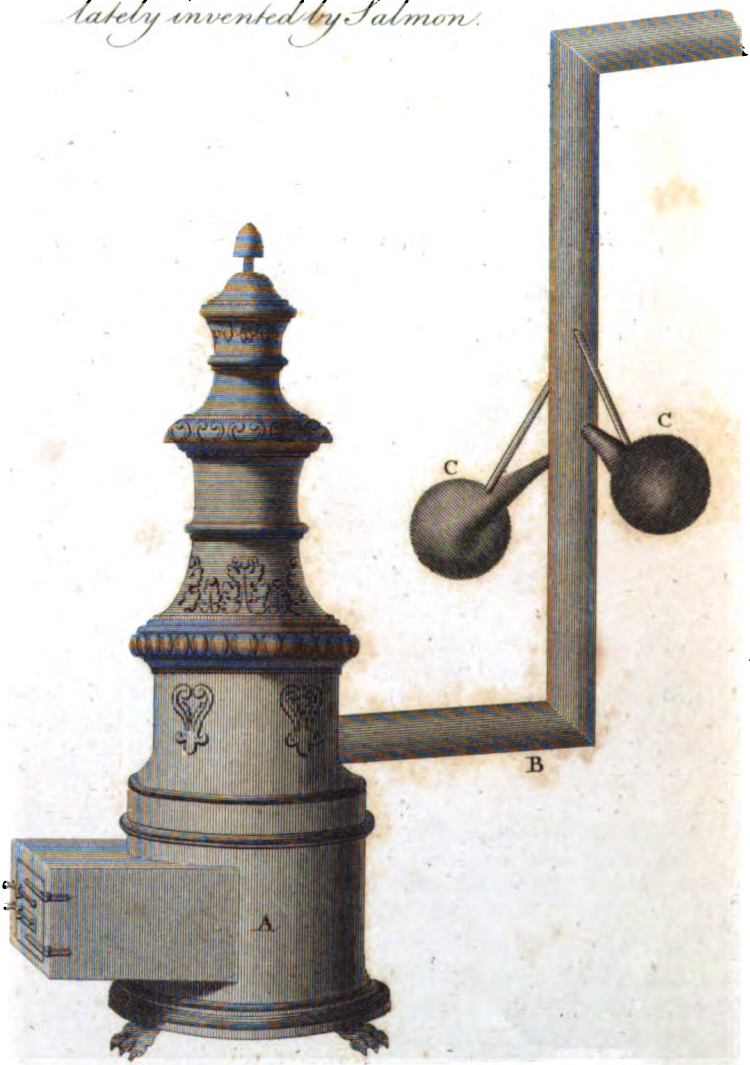
The Stove Ventilator

lately invented by Salmon.



Printed for Richard Phillips, No 71, St Paul's Church Yard Feb 1 1804

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THE

Medical and Physical Journal.

VOL. XI.] FEBRUARY 1, 1804. [NO. LX.

Printed for R. PHILLIPS, *by* W. Thorne, *Red Lion Court, Fleet Street, London.*

To the Editors of the Medical and Physical Journal.

FAS EST AB HOSTE DOCERI.

GENTLEMEN,

THE enclosed Instructions on the means of maintaining the salubrity and purifying the air of the wards of hospitals, applicable also to large assemblages of people in courts of justice, playhouses, &c. drawn up by the French Council of Health in the year 1795, appear to me to hold out a promise of infinite utility at the present moment, when a regard to our preservation and defence has assembled such powerful fleets and armies, the valuable members of which are exposed, among other perils, to the calamities it is the object of these instructions to avert. You will find them to contain several important observations on the employment of the gases, in destroying contagion, a subject which has been rendered more than usually interesting by a late award of the British parliament.

I am, &c.

Pentonville, Dec. 19, 1803. S. J.

INSTRUCTIONS ON THE MEANS OF MAINTAINING THE SALUBRITY AND PURIFYING THE AIR OF THE WARDS OF HOSPITALS AND CROWDED ASSEMBLIES.

[With an Engraving.]

Means of Cleanliness.

CLEANLINESS, which is so essential under all the circumstances of life, is the most powerful corrective of the local defects of salubrity, and ought therefore to constitute the principal object of the attention of all hospital agents. Professional men, whose duty it more particularly is to enforce a strict observance of every necessary precaution, should endeavour to convince the sick of the di-

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rect influence which cleanliness has on the complete and speedy re-establishment of their health. Persuasion has a powerful effect on men, when it is founded on the opinion of the interest that is taken in their health and preservation. The regulations which follow are, for the greater part, applicable not merely to hospitals but to prisons, and, in general, to all establishments where many individuals, some in a healthy, and others in a diseased state, may be crowded together.

As soon as the sick are brought into the hospital, their hands and feet should be washed in warm water.

The utensils destined for their different uses ought to be frequently washed.

The foul linen should be carried to the most airy part of the building, and there suspended on solid poles, without being heaped together, until the time arrives when it is to be washed. The pieces of linen which may have been employed in the dressing of wounds, &c. ought to be instantly collected in baskets, and steeped in water till they can be washed out in a strong lie.

The great coats and blankets should be beaten and brushed from time to time, and afterwards fumigated with burning sulphur. They ought to be sent to the oven at least once a year.

The wool belonging to the mattrasses should be beaten and carded, as far as it is practicable, every six months. Their coverings, and those belonging to the straw mattrasses, ought to be frequently and effectually washed in lie.

The bathing tubs, if wood be the material employed, should be painted and varnished both within and without.

In each of the wards vessels filled with water should be placed, and their contents frequently renewed.

The vinegar, which it has been the practice to bestow uselessly on fumigations, should be mixed with water, and employed in gargles, or in sprinkling the floors of the wards, before they are swept.

The walls and cielings of the wards ought to be white-washed at least once a year; and the bedsteads, window frames, tables, and even planks, washed with lime-water, or with a strong alkaline lie.

The articles of clothing, &c. belonging to the hospital, which may have been worn by a patient labouring under a contagious disease, should not be again employed, until after they have been sweetened by the means which will be pointed out in the sequel.

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Each of the lamps ought to be provided with a conductor, to facilitate the escape of the smoke withoutside.

The number of the beds contained in each ward ought to be irrevocably fixed, and inscribed over the door. It ought to be governed by the extent, form, elevation, and disposition of the ward, in such a way as that, in a ward the cieling of which may have an elevation of from ten to twelve feet, the beds should be stationed at least two feet from each other. If it should have an elevation of nine feet only, the space ought to be augmented to two feet and a half. Between each of the beds and the wall, a space of from two to three feet ought to be allowed. Whatever the extent of the ward may be, ranges of beds ought in no case to be allowed in the centre.

The patients should not be suffered to pass reciprocally to and from the wards in which contagious diseases are prevalent.

In the vicinity of the wards, or of the hospital, neither stagnant water, heaps of dung, nor any vegetable or animal substances in a decomposed state ought to be allowed.

Close-stools should be constantly provided in such numbers as that those in use may be instantly replaced whenever necessity may require. They ought not, however, to be allowed unless to the patients who are dangerously ill. Water should be constantly kept in these utensils, the seat of which ought to be carefully washed from time to time. They should be covered, both without and within, with a thick layer of drying oil.

The improper position of the necessaries, in the greater part of the hospitals, is one of the most direct causes of the disagreeable smell which strikes the organs on entering. Notwithstanding an attempt has been made, in several places, to cleanse them and drain off their contents, by the means of a current water, still it frequently happens that the water has not a sufficent impulsive force for this purpose, while in other cases it is not to be procured. Another very common defect consists in the doors of the necessaries not being provided with weights withinside, that may enable them to shut of themselves. It very seldom occurs that the expedient has been resorted to of forming, between them and the wards, an intermediate vestibule with transverse and corresponding windows, calculated to renew the air constantly, and to intercept the communication of the smell. These precautions are, however, best calculated to diminish the influence of the infection which is exhaled from the vicinity of the necessaries. It would perhaps be

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possible to remedy this inconvenience by removing the pits, or cavities, to a distance of at least six feet from the walls; and by constructing, on each floor of the building, a privy to which the patients may repair by a slight but sufficiently solid gallery. In each of these privies there should be five or six seats placed circularly over the pits.

The seats of the necessaries ought to be washed daily; and this article of cleanliness should be made a very strict regulation of police.

Mechanical Means.

The best mode of preventing, or correcting, the bad qualities contracted by the air in the wards of hospitals, is to introduce it from without, at the same time that an outlet is afforded to that which has been vitiated by the respiration, and by the emanations from the sick, more particularly when they are crouded together in too circumscribed a space.

When fires are kept, the chimnies have this double effect; but as every part of a ward cannot be heated by the means of fire places, so as to satisfy the sick, and as the local circumstances do not always admit of them, stoves have been occasionally made to supply their place. What has been thus gained on the score of the saving of fuel, and of the distribution of heat, has been lost on the score of the renewal of the air. When the construction of stoves is considered, it must be manifest that they cannot determine so voluminous a current of air, as that which is established by the means of a chimney.

In reality, the aperture by which the air finds its way into stoves, having a diameter of a few inches only, can simply attract a column of air of that dimension; insomuch that a greater quantity cannot be renewed in the wards, at the same time that the air, which is not within the boundaries of this current, is driven back on the beds and on the walls. As, in the rivers which flow with the greatest impetuosity, the water in the middle of their bed glides rapidly on, while that at the sides remains in a manner motionless; so likewise the air, thrown into action by any cause whatever, escapes through the outlets which present themselves in its passage, and repels, in the lateral parts of the wards, the layers in its vicinity. The latter, being effectually made to ebb, are renewed with difficulty, and preserve for a long time their noxious quality. It has accordingly been remarked, that the patients placed in these parts of the wards are exposed to more serious relapses,

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lapes, and cured with greater difficulty than the others. It therefore becomes necessary, to put in action, at the different points of the wards, an agent possessing a sufficient activity to embrace and draw off the totality of the volume of air contained in them.

A method which has been recently proposed to the council of health, and which has met with its fullest approbation, consists in applying to the funnels of the stoves at this time employed in the hospitals, the *aspirators*, or suckers, invented by Salmon, surgeon to the military hospital of Nancy. These aspirators are cones of canvas fourteen inches in length, forming a kind of trumpet, the large aperture of which has a diameter of ten inches, and which is terminated by another aperture of three quarters of an inch. This latter extremity is introduced into the funnel of the stove about an inch and a half, and is there solidly fixed. In proportion as the heat within the stove is augmented, the extremities of the aspirators which are within the funnel receive an additional warmth, and attract in the same degree the atmospherical air of the ward, which is constantly disposed to place itself in equilibrium with the warmer current of air circulating within the funnel. This attraction is made with great celerity, and in proportion to the mass of air that has acquired a mephitic quality.

This ingenious expedient has been attended by the most complete success, and is susceptible of further improvement. It renews the air which has not contributed to combustion, and renders the stoves, by which that element has been hitherto vitiated, capable of maintaining its salubrity. In the plate annexed to this article, A. is the stove; B. the funnel; and C C. the canvas *aspirators*, or suckers. The necessary explanations for the adoption and application of this contrivance have been given above. To facilitate its effect, vessels filled with pure water ought to be placed on the stoves, more especially on those heated with coals. It is unnecessary to add that it would be of the highest utility in manufactories, and in all public establishments in which stoves are employed.

Whatever may be the efficacy of the mode which has been thus pointed out, it cannot, however, be employed for the renewal of the air, unless during winter. It therefore becomes necessary to substitue something in its stead during the other seasons of the year.

Fire also affords us this help, by the application of the ventilating furnace which has been for several centuries

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employed in the coal mines. Instead of placing it, however, on the top of the building, a less dangerous and more commodious situation may perhaps be found for it.

When the atmosphere is perfectly calm, the current of air is too weak to facilitate the escape of the portion withinside. In such a case, Maret, a physician of Dijon, has proposed to suspend, in the middle of the window the most favourably situated, a chafing dish filled with lighted charcoal, which, by rarefying the air at that point, may determine thither a current possessing a sufficient rapidity to traverse the ward, and carry off with it a part of the infected air.

It would be highly improper to neglect to open, every morning, and invariably on the side opposite to that from which the wind blows, the doors and windows of the wards. These outlets ought to be multiplied as much as possible; and corresponding ones ought to be made, to give a free access to the circulation of the air, more particularly while the beds are making, and the wards swept.

The renewal of the air may likewise be effected by forming, in the inferior part of corresponding windows, shutters contrived to open on a swing, so as to compress the air, which, having thus acquired a greater force, will give motion to the portion it will renew, and, by displacing it, will prevent the sick from being exposed in too immediate a way to the impression of cold.

The supplementary means which are best calculated to renew the air, and to diminish the causes of insalubrity, cannot be too much multiplied. A very simple one, the good effects of which have been demonstrated by the daily experience of those who work in the mine quarries, consists in boring, in the walls, and more particularly in the angles of the wards, corresponding holes from the floor to the cieling. By opening successively one beneath, and another above, opposite to it, taking care at the same time that the others should be closed, a current which sweeps away the stagnant air is established.

Experience demonstrates that the most turbid water becomes drinkable, and the most unwholesome air is fitted for respiration, by the means of a motion impressed on them. In either of these cases, it is constantly the air that has contracted the bad qualities, which are expelled and replaced by a purer air. Now, this advantage can only be obtained by the agitation of these two fluids, which are so essential to life. It would therefore manifest a criminal indifference

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indifference to neglect any thing which can give mobility to the air, and occasion its renewal.

It will be likewise expedient to establish vent-holes in the different parts of the wards, and to multiply them in proportion to their capacity, employing, for instance, an inverted trough provided with a tube rising from the floor to the ceiling, and a valve made to open and shut at pleasure by the means of a cord and pulley. It cannot be too often repeated, that dwellings in which the air is stagnant are as prejudicial to the health as marshy grounds.

During the summer, when the atmosphere is surcharged with heat, each of the wards may be provided with a large fan, which, being put in motion by the help of a cord, may agitate the air, force it to flow out in proportion as it is vitiated, and convey to the sick a salutary and refreshing coolness.

The use of thermometers ought to be adopted in hospitals; and it should be so contrived as that the temperature of the wards should never exceed from 66 to 68 degrees of Fahrenheit.

During the violent heats the passages leading to the wards should be frequently sprinkled with water; and, withinside, branches of trees recently cut should be distributed, with a view to the refreshing coolness which is so desirable and necessary.

As far as it may be practicable, trees, shrubs, and *inodorous* plants, ought to be kept in full vegetation in the vicinity of hospitals.

Chemical Means.

It is not enough to have prevented the air within from contracting, by its stagnation and a want of communication with the external atmosphere, a noxious disposition; but it is likewise necessary to attack those morbific particles from which fatal effects result, even in the medium that has been just particularized.

It is known that there exist diseases, which, during the whole of their duration, are productive of emanations the more dreadful in their results, in proportion as the constitution of the air which receives them is vitiated; as the ceilings of the wards are low pitched; and as there are a greater number of individuals collected together. These emanations, these *germes*, which are even living after the destruction of the cause that gave them birth, fix and attach themselves to the walls, floor, sheets, blankets, articles of wearing apparel, and bedsteads. They have the

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dangerous faculty, of preserving for a long time their *deleterious* quality, and likewise of continually poisoning the air. Under these cicumstances, the means that have been pointed out above become insufficient to produce the *disinfection*; and it is therefore necessary to combine with them still more powerful agents.

Perfumes, of whatever kind they may be, are far from possessing the wonderful properties that have been ascribed to them, and afford but a treacherous security. During their ignition within a circumscribed space, they consume the portion of vital or pure air which they abstract from the atmospherical mass. When they are gradually consumed, so as to become carbonated, the more or less aromatic vapour they exhale is soon confounded with the air it tends to vitiate. When it is inspired in a mass by those of the patients who receive its earliest impressions, it may occasion derangements of the animal economy. This vapour does not supply a new air; and, being extraneous to that with which it blends itself, does nothing more than disguise the bad smells, without destroying them. No time ought therefore to be lost in banishing perfumes from the apartments of the sick.

This opinion relative to aromatic fumigations is not in contradiction with that of the ancients. The forests they consumed with a view to purify the air of infected countries; and the large piles, composed of odoriferous woods, the flame of which was directed towards the cities where a contagion prevailed, were nothing more than immense fires purposely employed to give to the air a greater mobility, and to restore to it, by its renewal, the purity and elasticity of which it had been deprived by any cause whatever. This was invariably done on the supposition that the air was the vehicle of all pestilential scourges.

In several hospitals vinegar has been employed in preference to aromatic substances. It has been the practice to throw it on a heated fire shovel, for the purpose of expelling the infected smells, and neutralizing the putrid miasmata dispersed in the atmosphere. It is, however, erroneous to imagine, that, when it is thus decomposed and reduced into vapour, it possesses any such property. In the same way as the perfumes, it does nothing more than surcharge the air, while it diminishes its elasticity, and renders the infected odour, which it was intended to correct, still more sensible.

It is not but that vinegar, when thrown into expansion in a bottle with a large orifice, may, in common with all the

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the acids in a gaseous state, be capable of forming combinations with the putrid ammoniacal miasmata, and, by their destruction, may restore to the air, in which they were in a manner dissolved, its purity and elasticity. But in these cases, its efficacy, relatively to which there is but one opinion, cannot be compared with that of the acetic acid, or radical vinegar; and the latter is still inferior to the agent we now proceed to notice.

Among the means which chemistry has suggested, and which have been employed, to bring about this depuration, with a success which, at a first glance of the subject, seems to surpass all belief, we shall cite the process employed by Guyton Morveau in 1773, in the Cathedral of Dijon, infected to such a degree by the bodies which had been dug up, that it was abandoned by the inhabitants.

This process consists in diffusing in the atmosphere the muriatic acid (acid of sea salt) in a gaseous state, disengaged by the intervention of the sulphuric acid (oil of vitriol). The following is the method of freeing from infection a ward containing from forty to fifty beds.

After having removed the sick into another ward, place in the middle of the empty ward, the windows and doors of which ought to be closed, a furnace provided with a small iron pot half filled with sifted wood ashes, on which is to be laid a glass or earthen vessel containing nine ounces of muriate of soda (common salt) slightly moistened, with half an ounce, at the most, of plain water.

The fire having been lighted, and the vessel heated to a proper degree, four ounces of sulphuric acid, or the oil of vitriol of the shops, are to be poured on the sea salt. The sulphuric acid will act instantaneously on the latter, the acid of which will be made to expand. The operator, who ought to be the apothecary in chief, or one of his assistants well acquainted with the mode of performing chemical operations, should now retire, shutting the door, and taking possession of the key.

He should not enter the ward until twelve hours after, when the doors and windows ought to be opened, to establish currents of air, and to get rid of the portion which may be still charged with the acid.

This process will be rendered of still greater utility, by the application of it to the wards still filled with the sick, as often as the medical men may deem it expedient. Thus, when it has been ascertained that the air of a ward is charged with animal miasmata, and is in want of this excellent purifyer, it will suffice to employ a third of the mixture

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mixture above pointed out, or even less. In this case the operator, having the chafing dish in his hand, should proceed, with more or less promptitude, to every part of the ward, beginning as soon as the gas is thrown into an expanded state. As soon as the ward is deemed to be sufficiently filled with the muriatic acid gas, the apparatus should be carried to the privy, to the end that the latest gaseous portions which the mixture may continue to supply, may serve to neutralize the putrid ammoniacal gases which are constantly developed in places of that description.

This operation, which is not attended by any disagreeable sensation, is nevertheless sufficient to cleanse and purify a ward. It may be applied daily, and even more frequently, in a partial manner, to wards in which one or several patients, labouring under gangrenous affections or other putrid diseases, may throw off dangerous miasmata. In an urgent case, provided the concentrated muriatic acid (fuming marine acid) should be found in the dispensary, the same effect may be obtained by carrying an open bottle filled with this fluid in the wards. If it should not be sufficiently concentrated, it may be warmed with a view to bring it into a gaseous state. Finally, these processes may be repeated as often as it may be deemed necessary by the professional men, as was formerly the practice in the case of the useless and even dangerous aromatic fumigations.

Before the operation is entered on, it is expedient that the precise state and condition of each of the patients should be correctly ascertained, to the end that those who have the care of them may, when the atmosphere of the ward is charged with the muriatic gas, be enabled to observe with greater certainty, whether the individuals exposed to its action are subjected to any change, which may, directly or indirectly, be ascribed to this destroyer of putrid miasmata. This precaution will tend to augment the confidence of all, and, perhaps, to perfectionate the application of the means.

The surgeons should be careful not to leave their instruments in the ward in which the muriatic acid is thrown into expansion, seeing that it attacks steel, which it rusts in an instant. On another hand, the apothecaries, to the end that nothing may be wasted, ought to collect the remains of the different mixtures, from which they will obtain, as a product, the sulphate of soda.

It may readily be conceived, that when it is found necessary to diffuse a large quantity of the muriatic gas, its disengagement ought not to be attempted in wards which, together

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together with the effects they contain, are to be freed from infection, until after the patients have been removed. The only mode of effecting this, is to have constantly, in each hospital, a *change ward* for the reception of the patients belonging to the ward it may be deemed necessary to free from infection. This ward ought not, on any pretext whatever, to be applied to any other than the above salutary purpose; and in the principal hospitals two wards ought to be kept for this operation.

The ward which has been thus purified, will in its turn, answer the purpose of a *change ward*, and thus successively, until all the wards shall have been freed from infection, and the miasmata disseminated on the surface, and in the atmosphere of the hospital, shall have been neutralized and destroyed: — until, in short, the air shall have been entirely renewed.

In the ward in which the operation is performed on a large scale, the blankets, mattresses, clothing, and, in general, all the pieces of linen or woollen cloth which may have been employed in particular diseases, ought to be exposed to the action of the muriatic gas, in such a way as that the vapour may reach each of the surfaces of the substances in which putrid miasmata may lurk. The same thing ought to be done in the passages and avenues leading to the wards.

The oxygenated muriatic acid possessing, as Fourcroy has observed, a still greater energy, ought to be preferred in this process. Accordingly, when the oxyd of manganese can be readily procured, a small quantity of it may be added to the above mixture. For this purpose, the metallic oxyd in question ought to constitute a part of the supplies of the dispensaries.

The combustion of sulphur has been employed, not unsuccessfully, with the same view. But the sulphurous gas which is disengaged is not managed with the same facility, and does not, besides, rise so readily into the upper regions of the air.* It cannot therefore be substituted, without detriment, to the vapours of the muriatic acid, which, by their extreme expansibility, readily diffuse themselves in the upper and lower layers of the atmosphere, seizing with avidity on the putrid miasmata which are there condensed, and which seem to be of the nature of ammonia (volatile

* This observation, which is extremely important, applies equally to the *nitrous* acid.

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(volatile alkali). These miasmata the muriatic acid attacks, wherever it encounters them. It is expedient, however, not to neglect the combustion of sulphur.

The means of explosion and deflagration hitherto employed, to destroy contagion, such as inflamed nitre, gunpowder, and the discharge of fire-arms, act merely by their mechanical effect, and do nothing more than displace and change the air for the moment. Their efficacy is but of a short duration; and independently of this consideration, the only gases they disengage are the azotic and the carbonic acid. Lime-water itself, by which the latter of these gases is absorbed, does not appear to annihilate the morbific miasmata.

The complicated ventilators, on which so many praises have been bestowed, if duly appreciated, will be found to possess but a comparatively trivial advantage. By the space which they occupy in the wards, they are rather an incumbrance, and an obstacle to the free circulation of the air, than an assured expedient for its complete renewal.

At this time, when chemical knowledge has been successfully applied to our prime necessities; when it is as easy to analyze the air as other fluids; when its nature can be ascertained in an instant; and when the specific qualities which it needs, to contribute to the maintenance of life, can be restored to it; the medical men belonging to hospitals ought to consider it as one of their most essential duties, to ascertain, from time to time, the temperature of the air of the wards, taken in the angles, and at the head of the beds.

The experiment is a very simple one. It consists in entering the ward, provided with two phials, one of them filled up to its mouth with pure water, and the other with lime water. The former is to be emptied at the spot where the quality of the air is to be ascertained; and the one half of the lime water contained in the second bottle to be added instantly after. The vessel having been nicely closed and agitated, the quantity of the precipitate, and the promptitude with which it is thrown down, will serve to determine the necessity and urgency of the employment of the muriatic gas; seeing that the knowledge recently acquired, relatively to the nature of the gases, renders it highly probable, that in the wards where a suspicion of insalubrity is entertained, the putrid miasmata are constantly accompanied by a considerable quantity of the carbonic acid.

Lime water presenting the most economical and efficacious mode of freeing the air from the carbonic acid gas which

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is necessarily produced by a great number of persons collected together; and this acid being so much the more dangerous as it is retained by its gravity in the inferior region of the air; vessels filled with lime water ought to kept in each of the wards. The promptitude with which the pellicle is formed, is the best eudiometer to ascertain the presence of the carbonic acid gas; since those of Fontana, Volta, and Scheele, merely point out the air from which vital air has been drawn.

Conclusion.

It results from what has been laid down, that as cleanliness has a decided influence on the salubrity of hospitals, its strict observance in every partieular will render the employment of the mechanical and chemical means which have been pointed out, either less frequently necessary, or more efficacious in their results. Accordingly, to renew the air of the wards, and to destroy the mephitic vapours which usually abound in them, it ought to be observed:

1st. That the hospitals should be freed from every source of infection; that the sick should not be crouded together in too great numbers; that the utensils destined for their different uses should be perfectly cleansed; that the hospital great coats and blankets should, together with the various articles of clothing, be subjected to the action of the muriatic acid, or sulphurous gas, whenever they have been worn or employed by patients labouring under contagious diseases; that the body linen, sheets, napkins, &c. should be well washed; and the walls and floors swept daily.

2dly, That a well directed fire being the most certain mode of preventing the stagnation of the air, of establishing strong currents, of renewing it, and augmenting its motion, it is necessary to multiply these currents, in proportion to the extent and form of the building, and constantly to give them such a direction as will enable them to expel the foul air at each of the points of the wards; that the *aspirators*, or suckers, fixed to the funnels of stoves, constitute at this time the instruments best calculated to produce such an effect; that every opportunity ought to be embraced to open the windows, as well as the apertures made in the doors, aud at the angles of the walls; and that the vegetation which nature employs to maintain and re-establish the salubrity of the air, ought to be comprehended among the means employed to maintain the salubrity of hospitals.

3dly, and lastly. That the means of cleanliness, and the mechanical

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mechanical means, inteuded to produce the effects that have been pointed out, are sometimes not sufficiently powerful to destroy the putrid ammonical miasmata which particular diseases disseminate in the atmosphere; that the common muriatic gas, and the oxygenated muriatic gas, eminently possess the property of seizing these miasmata wherever they may have fixed themselves, and of decomposing and neutralizing them; that this process ought to be performed on a large scale, and successively in all the wards of the hospital, by the means of an empty ward to be denominated the *change ward*, which ought to be constantly and exclusively reserved for the reception of the patients belonging to the ward intended to be purified, and by the aid of which the totality of the hospital may be sweetened, and freed from so deleterious a principle. As lime possesses, however, the property of readily absorbing the carbonic acid gas, vessels filled with lime water, which should be agitated from time to time, and renewed as the circumstances may requlre, ought to be placed in the extremities of the wards.

The Council of Health being desirous to avoid pointing out to its fellow labourers a process with which many of them may be unacquainted, without having at the same time ascertained its efficacy, by trials made in the establishments within its reach, sent several of its members to the hospitals of St. Cyr, St. Dennis, and Gros Caillou, to institute the necessary experiments. The result of these experiments has incontestibly proved, that the mode proposed to free from infection the wards of hospitals by the muriatic acid gas, may be executed without inconvenience, and with the utmost advantage, as well in inhabited as in empty wards, observing, however, to disengage in the former, a smaller quantity of gas.

The expedients which have been proposed are not, as has been already observed, confined to hospitals; but may be rendered highly useful in barracks, ships of war, prisons, houses of industry, and, in general, in all the asylums where a considerable number of persons are assembled. These establishments, the greater part of the inmates residing in which labour under either physical or moral derangements, may be equally infected by a vitiated air, and

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fection of the air in hospitals, and to free them, whether from mephitic vapours, or from putrid miasmata, it has been our aim to render them supplementary to each other. Unquestionably, they do not all of them possess the same energy; but the effects of each are analogous; and too many sure weapons cannot be resorted to against such an enemy. Their employment will lead to a due appreciation of their respective merits, and of the greater or smaller share of attention to which each of them may be entitled, according to the local circumstances. Such is our reply to those who may consider any part of these instructions to be superfluous.

To the powerful considerations of humanity, and of what we owe to our suffering fellow creatures, the Faculty, ought to unite what their own interest demands. Living in a manner in the very focus of morbific emanations, they incur the risk of becoming daily, by a neglect of the precautions that have been prescribed, the victims of the scourge, the preservative and the remedy for which are the objects of these instructions.

Signed. DAIGNAN, BAYEN, PARMENTIER, HEGO, HEURTELOUP, LASSIS, PELLETIER, THERY, CHEVALIER, DUBOIS.

BIRON, *Secretary.*

To the Editors of the Medical and Physical Journal

GENTLEMEN,

WHEN I entered on the consideration of the medicinal properties of opium, I did not expect, neither did I wish, a question so complicated and interesting to be decided without an ample discussion of its merits; but I did wish to avoid useless and unnecessary altercation about extraneous matters; you will therefore, I trust, give me credit for the assertion when I say, it is with no small concern that I have occasion to call your attention and that of your readers, to two communications inserted in the 48th and 58th Numbers of the M. and P. Journal, signed, George Nesse Hill.

The *desultory* manner in which the subject is there treated would have justified me in allowing them to pass unnoticed, had not the author accused me of inculcating a doctrine,

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trine, which I have uniformly and strenuously opposed; and when called upon to adduce proofs in support of his assertions, (which it was certainly incumbent upon him, as a candid man, to have done,) instead of complying with a request so reasonable, and one, which, could it have been done at all, might have been done with very little trouble; allows nine months to elapse without taking any notice of it; and when at the expiration of that time, his next paper appears, in which I expected to have seen the charge proved or retracted, I find no mention is made either of his former assertions or of my request; but, on the contrary, that it commences with an *erroneous statement of a passage from one of my papers.*

There is such an evident want of candour in this mode of proceeding, as, in my opinion, to disqualify Mr. Hill (even supposing him to be in other respects competent) for the performance of the task he has undertaken.

But I must now proceed to do that *justice* to myself which Mr. H. has so long and ungraciously withheld.

His accusation is conveyed in the following terms:

"It does not appear to me," (says Mr. Hill, Vol. x, page 154) "that this gentleman, when he first announced this matter to the public, conceived of the action of opium in the manner he has lately avowed, when employed in his critique on Dr. Crumpe's Inquiry; *for in some of his first communications he speaks of this drug as a tonic stimulant, in the latter ones as a sedative.*"

And in page 155, "We are not favoured with Mr. W's. definition of these important words, (stimulant and sedative) until we arrive at page 127 of Number 36; *and here I may be permitted to observe, that the accusation brought against the advocates for the stimulant doctrine, as Mr. W. calls it, is not less ascribable to those of an opposite opinion, this gentleman sometimes calling opium a tonic, at others a sedative.*"

And again, the third time, in page 157:

"*But, as already observed, Mr. W. has applied both these terms to opium; it is evident one or other of them must be abandoned, unless he can by any means prove, that the medicine possesses opposite qualities, or has diametrically opposite effects, according to the mode of its exhibition.*"

Now, I conceive it to be exceedingly improper for a writer to accuse another of inconsistency, without, *at the same time,* bringing proof in support of the accusation; but to withhold the proof when called upon to furnish it, is an offence against all the rules of decorum, and demands the most ample apology.

A charge

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A charge of this nature certainly surprized me, *having taken some pains to shew that there is no foundation for the opinion implied in it;* and, were it necessary, I could easily bring many passages in support of what is here advanced, but shall content myself with the following from Vol. 7. p. 346.

"Dr. Crumpe's view in making the experiment seems evidently to have been, to observe the *local appearances* resulting from the application of a solution of opium to a tender irritable surface; and this accounts for his omitting to notice any other circumstance. But after having proved to a demonstration that the *primary and general* operation of opium injected into the cavity of the abdomen is directly and powerfully sedative (both the voluntary and involuntary motions yielding to its influence) it necessarily follows, that the increased redness and apparent inflammation, *could not have been the consequence of the opium having acted as a stimulant, unless we suppose that it acts as a stimulant and a sedative at the same time, which would be absurd; and indeed Dr. Crumpe has shewn that idea to be unfounded.*" See his Inquiry, p. 167—8.

This however is only negative proof, but what I have written is upon record; and if there be any truth in Mr. Hill's charge, there can be no difficulty whatever in proving it.

Well knowing it to be unfounded, I added the following postscript to a letter I happened to be at that time preparing, and which appeared in the M. and P. Journal for April 1803. (Vol. ix. p. 348.)

"The request with which the above letter commences, precludes me from replying to Mr. Hill's communication, inserted in No. 48; I shall therefore only observe, that my sole view in selecting the quotation to which Mr. H. alludes, was merely to sanction the publication of the facts which had occurred to me, and that my choice was not directed by any opinion I had formed of the modus operandi of opium, (for I confess I had not then paid sufficient attention to the subject to enable me to make up my mind upon it) much less of its manner of operating in the disease treated of by Mr. Pott."

It will not, I hope, be deemed inconsistent with the tenor of my request, *to desire Mr. Hill will have the goodness to point out, through the medium of the Medical Journal, in which of my papers I have spoken of opium as a tonic stimulant, or have attributed opposite qualities to it.*

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And expected to have found in the next, and every succeeding number, that it had been attended to; *Mr. Hill's reputation as a writer certainly requiring that an immediate and full answer should have been given.* In this expectation however I have been disappointed, Mr. H. having published another paper in the Journal for the present month, without adverting to it. *He has certainly quoted a passage from one of my papers; but by adding a word, and leaving out two, has entirely perverted its original meaning: and this misrepresentation* (as the paper commences with it) *seems to have been intended as a justification of his conduct.*

The passage as it stands in my paper (M. and P. J. Vol. vi. p. 480) is as follows:

"*After the same medicine* (opium) *both alone and joined with other antispasmodics, tonics, &c.*"

As represented, *or rather misrepresented* by Mr. Hill, it stands thus.

"*Opium joined with other antispasmodics, and tonics.*" See Vol. x. p. 532.

The most favourable construction that can be put upon Mr. Hill's conduct in this instance, is; that he quoted at random, without any regard to accuracy.

"*Can the best interests of the profession in any degree be furthered*" (to use a phrase of Mr. Hill's) "*by such unworthy means?* or, can such a proceeding, (to use another of Mr. Hill's) "*tend to the promotion of that desirable end of all amicable discussion,*" (truth and consistency)? *

It

* "Having taken some pains (says Mr. H. Vol. ix. p. 153—4) to understand the new theory of the modus operandi of opium, as attempted to be established by Mr. Ward of Manchester, and finding that every number of your useful work, containing any of that gentleman's remarks on this great subject, has tended only to convince me of the just foundation in truth of Dr. Crumpe's statement, *although that author's work has not* FALLEN *into my hands)* I have taken the liberty of troubling you with a few occasional thoughts, which have occurred to me on this important matter; *if you think the best interests of our profession will in any degree be furthered by the insertion of them, I crave a place in the Journal, at your convenience: if not, please to set them aside.*"

"I have, for some time, been waiting with some degree of impatience, to see the doctrine Mr. W. has endeavoured to elucidate, and enforce, freely canvassed and discussed in all its views, *that its harmony with truth, and its consistency with experience,* might establish the fact, or its fallacy and speciousness be detected, and the question be for ever set at rest. Hitherto I have been disappointed; *it will give me no trifling satisfaction to find that what I have said has tended to the promotion of this desirable end*

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It may perhaps be said, that Mr. Hill's last paper has been written some time, and kept back in consequence of my desiring the readers of the Journal to suspend their remarks on my papers, until the whole of the evidence shall have been laid before them; but this plea will be of no avail, as it contains nothing to the purpose.

It only remains for me to apologize to yourselves and your readers, for having occupied so much of their and your attention on so unpleasant an occasion.

I am, &c.

Manchester,
December 22, 1803. M. WARD.

CASE OF INVAGINATION OF THE COLON IN THE RECTUM; *read at the Medical Society of Paris, by G. Roux, M.D. Communicated by our Correspondent at Paris.*

A. B. a labourer, forty-eight years of age, was seized in the spring with diarrhœa, accompanied by derangements of the stomach. The day of its occurrence he had committed some excesses as well in the use of drink as of exercise; the patient complained of cholic pains, which were the consequence of this excess; in short, the complaint increased in intensity and violence, so as to oblige him to go twenty or twenty-five times a day to stool. During one of those efforts a tumour appeared of the size of an egg, exteriorly, at the anus, accompanied by such violent pain as to render it impossible for the patient to stand erect; in this state he was got to bed, and in less than two hours the tumour had increased very considerably. A woman, who happened to be present, made many useless efforts to reduce the tumour, after which the patient called for medical assistance.

The person who was consulted did not endeavour to reduce the swelling, but had recourse to general bleeding and the use of barley water; the bleeding was repeated the same evening. The third day of the existence of the complaint, M. Roux, and M. Lauernet, surgeons, were called to see the patient, who found the fever considerable and the belly painful to the touch; pains were also felt, which

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end of all amicable discussion, being long since assured that the real interests of truth have nothing to apprehend from the closest severity of investigation, nor the utmost censure human judgment can pronounce."

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extended from the epigastric region down to the extremity of the tumour, which had now a frightful appearance; it was from nine to ten inches in length, and six or seven broad, of a chesnut colour, hard, and extremely painful, and furrows of a deep brown colour were observable on its surface. The size and hardness of the tumour precluded the possibility of its reduction, and the gentlemen in attendance confined themselves to the use of such means as were best suited to calm and allay irritation. The use of the white decoction of Sydenham was recommended as drink, and baths procured some relaxation from pain, which, as well as the tension, had much diminished; the colour of the swelling, however, was become much darker.

On the fourth day a hiccup commenced, which increased considerably in the course of the day; the fever and pains in the intestines continued, and the appearances, as already described, remained the same, as well as the impossibility to effect a reduction. The same treatment was continued.

On the fifth day the hiccup and pyrexia had increased; and in the evening nausea and vomiting came on. The tumour was flaccid in some places, but the circumference of the anus continued hard; and the exterior membrane of the tumour seemed disposed to exfoliate. New and fruitless efforts were made to reduce it. From this moment all hopes of future success were given up; "we even doubted its utility or advantage, for we had reason to presume the existence of a strangulation above sufficiently great to have caused gangrene to be the principal source of the accidents which now began to succeed each other with rapidity, and which bore a striking analogy with the appearances of strangulated hernia. We determined to make use of antispasmodics united to antiseptics." A Note of the Author observes, that "the very critical situation in which he, as well as the other persons in attendance, were placed, required every precaution. It was at this period that we examined the question, Whether an enlargement of the anus, with a view to favour reduction, was advisable in the present state of things? We inclined to the negative so much the more strongly, as we were really ignorant of the parts engaged, or of the seat of the strangulation."

On the sixth day, all the symptoms had increased, accompanied by vomiting of stercoral matter; the pulse was weak, small, but regular; the tumour was flaccid, and there was a sensible diminution of volume; there issued from it a very strong putrid exhalation, accompanied by an ichorous

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ous oozing from its surface, and about the verge of the anus.

On the seventh day, the fever was stronger in the morning, the pains in the belly more sharp, respiration more laborious, as well as the vomiting and hiccup; the tumour was much diminished, but the tension about the sphincter continued. The medical attendants having communicated the approaching death of the patient to his friends, they gave him up to the care of an old woman, who, by repeated efforts, had thrust the tumour within the rectum. In the evening of this day the patient died.

Persuaded of the existence of a volvulus, M. Roux, &c. obtained, after long solicitation, permission to examine the body; and the following were the appearances: "The external tumour had almost entirely disappeared; on opening the abdomen much gas issued, and there was found in the cavity about a quart of a serous brownish-coloured fluid. The volume of intestines was greater than natural, and they were covered by a new membrane, which connected them with the peritoneum on all sides. The intestinum ileum, two-thirds of the superior portion of the colon and the cæcum were inflamed, particularly the two first. Pursuing our inquiries toward the rectum, we perceived, at the superior part of this intestine, an inflammatory ring, about seven or eight inches distant from the sphincter, and compressing very strongly the inferior part of the colon. While we were examining these appearances, we remarked the laceration of the false membrane that united the two surfaces of the intestines, evidently invaginated. The rectum, when opened above the ring in question, shewed the colon invaginated in the rectum nearly thirteen inches. The two superior inches of this portion of the intestine bore evident marks of an alteration of structure. The diameter of the intestine was much contracted at this place, and its parietes were very much thickened; the three inches below this, and which formed nearly a third of the invagination, were free, and had scarcely any appearance of disease. The two inferior thirds of the invagination offered all the appearances of the intestinal tumour already remarked to have formed the external swelling: And, lastly, the two extremities of the invagination adhered strongly to the corresponding points of the rectum. The mucous membrane of the rectum was much tumefied, and altered from its natural state."

"These appearances (continues the Author) demonstrate to evidence the existence of intus-susceptio, a disease noticed

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ticed by the Father of Medicine, and on which Morgagni has much insisted." We find in Albinus, Fabricius, Le Cat, and Sabatier, very exact notions on the nature of this disease, particularly the latter, who, in a Paper inserted in the Memoires de l'Acad. tom. v. speaking of the supposed falling down of the rectum, says, "These facts prove that the disease called the descent of the anus or rectum, instead of being produced by the inferior part of the intestine, or by the prolongation of its internal coat tumefied, as has been hitherto supposed, has been frequently the effect of a volvulus or invagination of the intestinal canal, beginning at a greater or less distance from the anus, and which, after having forced through this opening, presents itself externally.

M. Roux asks, if art offers any resource in this case? He thinks it would be useless, if not injurious, since the strangulation does not always exist at the anus, and that we know not the place of its real existence. Should excision be proposed? Would not an operation, which comprehends parts of such great importance be inadmissable? Should an incision the length of the tumour be made? What would be its object? or what could be gained by it? And, lastly, he asks, Should gastrotomy be resorted to? This resource, proposed by some authors, and rejected by others, is but momentary; for considering the danger of the disease, and comparing its consequences with its disadvantages, we are obliged to confess with Hiver, that it should be banished from Surgery. Would the reduction of the tumour remedy the fatal consequences of invagination? This is probable; but it should be effected immediately, half an hour or an hour might give rise to changes which would render the operation abortive. Let us suppose that it was reduced under proper circumstances, would it not be useful, observes M. Roux, after reducing the intestine, to pass the index finger, with a view of disengaging all the invaginated intestine; after which emollient clysters, &c. should be employed. In this particular, the Author's situation, as well as of other medical men in attendance, precluded the possibility of every effort, and his motive in making it public, is to throw some light on the subject, and to call the attention of practitioners to similar occurrences.

The Revisors of this article, Messrs. Sedillott and Giraud, give the following Note on this Case. We think, say they, that in the cases where the reduction is impossible, that Gastrotomy, properly practised, becomes necessary.

It

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It would have been useful, they add, if the author had dwelt more on the state of the intestines, and that he had informed us whether their structure was not torn, in order to give passage to the intestine forming the tumour, so as to be contained only by the mucous membrane, as we observed in the case of a child of seven years old, in which all the small intestines protruded at the anus.

Paris, Nov. 17, 1808.

*** We recommend a paper on this subject by M. FAGES, inserted in the 7th vol. of our Journal; in which will be found the opinions on the advantages and disadvantages of Gastrotomy. ED.

OBSERVATIONS ON THE CRURAL HERNIA, BY DR. HULL,

(Continued from our last pp. 48—59.)

7. CHOPART and Dessault, if a division of the arch be necessary, direct it to be made upwards and inwards, when the hernia is situated near the crista of the os pubis; upwards and outwards, when it is at the side of the superior and anterior spine of the os ilium, in order to avoid the epigastric artery.—*Traité des Mal. Chir.* t. 2. p. 281, 8vo. Paris, 1779.

8. Richter directs us to examine well, whether the fibres passing from the fascia lata to the crural arch be sufficiently divided before we think of cutting the arch. The direction of the incision, according to him, must depend upon the situation of the hernia: If the hernia be placed entirely, or in a great measure, on the inside of the crural vessels, so that the pulsation of the crural artery can be felt on the outside of the tumour, the incision is to be directed obliquely towards the linea alba, and is *to be made as near as possible to the inner angle of the aperture,* not only because this part is the most distant from the epigastric artery, but because the hernia especially occupies this angle: If the hernia be directly over the crural vessels, or on the outside of them, the incision should be made near the external angle of the aperture, and be directed outwards and upwards. He also advises us to make the incision of the arch, at first only sufficient to admit the introduction of a finger, by which the pulsations of the epigastric artery may be generally felt; and then, should it be necessary to enlarge the incision, this may be done in a direction

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where no pulsation can be felt.—*Abhandlung von den Brüchen*, ed. 2, Gottingen, 1785, and *Anfungsgründe der Wundarzneykunst*, b. 5, Gotting. 1798.

9. Else to avoid the division of the epigastric and spermatic arteries in cutting the crural arch, made a small incision through the tendon of the external oblique muscle a little above the arch; he then introduced a grooved director through this incision, and keeping its point constantly in contact with the tendon or ligament, first passed it downwards and then backwards, so as to bring it out behind and beneath the crural arch. He afterwards cut through the arch upon the director. This method was recommended by Mr. Cline, at the time I attended his lectures; and if proper care be taken, the spermatic cord will be completely out of the reach of the knife during the cutting of the crural arch, the grooved director being placed between the knife and the artery. But it is not always easy to pass the director properly beyond the posterior margin of the crural arch.

A CASE.

Ellen Livesey, æt. 45, of Over Darwen, a village about four miles from Blackburn, had been afflicted with a crural hernia about three years, which she could always reduce by lying down on her back and pressing the tumour with her hand, before the 12th of June, 1785. On this morning she had rushed suddenly out of bed, in consequence of a knock at the door. Pain in the abdomen and sickness came on immediately. She experienced some uneasiness in the part, and attempted to reduce the hernia, but without success. She sent for a practitioner, who lived in the same village, but did not inform him of the rupture. He gave her some medicines, and these affording her no relief, Dr. Lancaster, of Blackburn, with whom I was then in partnership, was sent for the next day, the 13th. She still omitted to mention the circumstance of her having a hernia; supposing that, as she had had it so long without any material inconvenience, it could have no share in the production of her present painful and urgent symptoms. Considering the case as a colic, he directed for her a purgative mixture and clyster, and an anodyne mixture to be taken afterwards. She had no stool from the purgatives, but the pain and vomiting were relieved by taking the anodyne. Some degree of hiccup came on in the course of this day, but was not very frequent or severe. On the 14th, in the morning, the pain again increased, and I was called

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called in. She concealed the circumstance of the tumour till I questioned her about it. She then acknowledged it; and upon examining the tumour, I found it to be a small crural hernia. I attempted to reduce it by placing her head low and raising the thigh, at the same time pressing upon the tumour. This not answering, she was blooded, till she became faint, and another attempt was made to return the contents of the hernia, but in vain. She was next placed in the warm bath for an hour, and when she came out, a third attempt was made to replace it. This also failing, I proposed the operation. She would not consent at this time, and I returned home and directed her to take the saline mixture in the state of effervescence every three or four hours, requesting to be informed, as soon as she should consent to the performance of the operation.

On the 15th, about one in the morning, her husband came for me, and on my arrival at Darwen, having again attempted to return the hernia without success, I proceeded to operate, beginning the incision through the integuments about one inch and a half above the tumour, and carrying it down to about an inch below the tumour. The external oblique muscle and the fascia of the thigh being thus exposed, I divided the fascia, and afterwards the sac, which contained some bloody serum, and a small portion of intestine, very much altered in colour, but not mortified. I next made a small incision through the obliquus externus, rather more than half an inch above the anterior margin of Poupart's ligament; then introducing a director through this aperture I passed it downwards, with the view of getting it behind the ligament, and took care at the same time to keep the point of the director always in contact with the muscle or ligament as it passed along, for fear of its getting behind the ligamentum rotundum of the womb. The attempt to bring out the point of the director behind and beneath the ligament gave so much pain, that I desisted, and it occurred to me that I might derive some advantage from dividing the obliquus externus upon the director from the point where I had introduced it, down to the anterior margin of Poupart's ligament. I did so, and the gentleman who assisted me in the operation, was hereby enabled to raise the ligamentum rotundum out of the way of the knife, whilst I cautiously divided Poupart's ligament obliquely upwards and inwards, after insinuating the probe-pointed knife betwixt it and the sac. The division of the ligament being completed, a larger portion of intestine

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testine was pushed out of the abdomen, and formed a striking contrast, in point of colour, with the portion that had been strangulated. The whole of the protruded intestine was afterwards easily replaced. There was very little blood lost; and the wound being dressed, the patient was placed in bed with the breech raised. Her pain was relieved by the operation, and her pulse, which was at 126 before the operation, had now fallen to 112. I gave her an opiate and left her.

At nine o'clock the same morning I saw her again. She had slept a little, and had passed one small loose stool, so small indeed, that I could not conclude from thence that there was a free passage from the intestinal canal above the strangulated part. She had experienced no return of the vomiting. The saline mixture was continued. In the afternoon of the same day I saw her again. Her pain was now very considerable. The abdomen tumefied and tender, but not tense. An inverted peristaltic motion of the alimentary canal (differing from ordinary vomiting in this respect, that the diaphragm and abdominal muscles seemed not to be concerned in the evacuation) harrassed her almost incessantly. Every thing she took was instantly rejected. Her pulse being rather hard, though small and frequent, about twenty-four ounces of blood were taken from the arm: A strong decoction of poppy heads and chamomile flowers, with the addition of about one eighth part of common spirit, was used as a fomentation to the belly, and the boiled herbs were afterwards applied, mixed with hog's lard so as to form a cataplasm, and kept on the belly all night. A grain and a half of opium was administered every six hours in the form of a pill. The pain soon abated, and the proper action of the alimentary canal was restored.

On the 16th in the morning, I found she had slept tolerably. The tumefaction and pain of the belly were diminished; her pulse was less frequent. She had had no more stools. Eighteen ounces of blood were taken away. The opiate pill, fomentation, and cataplasm were continued.

On the 17th in the morning, she was much better in every respect. As she had not passed a stool, a purgative mixture was directed, which operated very well. She had stools regularly for some days and afterwards had a smart diarrhœa, which gave way to the combined use of opium, ipecacuanha, and catechu.

She had no bad symptoms after this time, and began to wear

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wear a truss in the August following, which secured her from a return of the complaint.

10. Mr. B. Bell thinks it impossible to make a free division of the crural arch in the male, without cutting the spermatic vessels across, and informs us that, instead of dividing Poupart's ligament from below upwards, he makes a slight incision into the ligament about an inch in length, beginning above and proceeding to the under edge of it; that by repeated touches with the scalpel he penetrates almost through the whole thickness of the ligament, till at last only a thin layer of it remains. And then adds, " In this situation the protruded parts may for the most part be returned with ease, as the ligament, where thus weakened by the incision, will yield gradually to the pressure applied for the reduction of the intestines."—*System of Surgery,* vol. v. p. 368, ed. 6.

From Mr. Bell's own account of the manner in which he performs the operation for the crural hernia, it appears that he only partially divides the anterior margin of the crural arch, and that he does not even touch the posterior margin. Nevertheless, Gimbernat makes the following observation upon Mr. Bell's method: " He would naturally rest the back of the scalpel upon his finger, which served as a guide to the instrument, and at the same time as a defence to the intestine. The incision being continued for an inch, the operator would inevitably cut the internal edge of the crural arch." Page 27.

11. Dr. Monro observes, " that the division of the tendon in the crural hernia is not attended with that degree of danger which some of the latest and most eminent writers have supposed, provided the edge of the knife be turned towards the umbilicus, in which direction both the epigastric artery and spermatic cord are at the greatest distance from it, and that the knife be used like a saw, dividing cautiously with it one tendinous fasciculus after another." *Description of all the Bursæ Mucosæ, &c.* p. 52, folio, Edinb.

Dr. Monro, jun. has given a more circumstantial account of the mode of operating in crural hernia, recommended by his father; from which it appears that his father first introduces a small furrowed probe, or directory, under the crural arch, before he divides it with the knife." *Observations on Crural Hernia,* p. 92, &c. Edinb. 1803.

12. Don Antonio de Gimbernat published his *Nuevo Método de Operar en la Hernia Crural,* at Madrid, in the year 1793; and Dr. Beddoes gave a translation of this work in the year 1795, under the title of *A new Method of Operating*

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ting for the Femoral Hernia, &c. M. Alibert will not allow that the method is new. He says, "La mèthode, que M. Gimbernat propose pour le traitement de la hernie crurale, n'est pas nouvelle pour les chirurgiens Français, malgré le titre de son opuscule." *Recueil Périodique*, &c. tom. ix. p. 331.

However this may be, we are indebted to Gimbernat for a more circumstantial description of the crural arch, than we before possessed, and, I believe, for the earliest publication of the method of operating, which we are now to consider. He directs us to cut that portion of the posterior margin of the crural arch, which is attached to the crista of the os pubis. His method of making the incision we shall give in the words of the Translator.

"For this purpose introduce along the internal side of the intestine a canulated or grooved sound, with a blunt end, and a channel of sufficient depth. This is to be directed obliquely inwards till it enter the crural ring, which will be known by the increased resistance, as also when its point rests upon the branch of the os pubis. Then suspend the introduction, and keeping the sound (with your left hand, if you are operating on the right side, and v. v.) firmly resting upon the branch of the os pubis, so that its back shall be turned towards the intestine and its canal to the symphysis pubis; introduce gently with your other hand into the groove of the sound a bistoury with a narrow blade and blunt end, till it enter the ring: its entry will be known as before by a little increase of resistance; cautiously press the bistoury to the end of the canal, and employing your two hands, at once carry both instruments close along the branch to the body of the pubis, drawing them out at the same time. By this easy operation you will divide the internal edge of the crural arch at its extremity, and within four or five lines of its duplicature, the remainder continuing firmly attached by the inferior band or pillar, of which it is the continuation. This simple incision being thus made without the smallest danger, the internal border of the arch, which forms the strangulation, will be considerably relaxed, and the parts will be reduced with the greatest ease." P. 45 and 46.

By this method of cutting the arch, which is well adapted to some cases of crural hernia, the stricture will be taken off without any danger of wounding the epigastric or spermatic arteries. Yet it is far from being perfectly safe. Gimbernat allows, that the urinary bladder will be liable to be wounded, if it be full at the time of the operation, and that in pregnancy of four months and upwards, the uterus

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uterus may also be wounded. Dr. Monro, jun. says, "If the bladder be emptied, the smaller intestines will slip downwards into the place the distended bladder of urine preoccupied, and hence may be injured." *Observations*, p. 92.

From what has been said above respecting the course of the arteria obturatoria, when it arises by a long common trunk with the epigastrica, this artery becomes liable to be wounded. And, when there is a stricture formed by the neck of the hernial sac, or an adhesion of the sac to its contents, there would be considerable difficulty in passing the director, and great danger of wounding the intestine. On this, and indeed other grounds, it would be an improvement on Gimbernat's mode to pass the director betwixt the sac and the extremity of the crural arch, instead of introducing it within the sac.

This author says (page 12), "If the Fallopian ligament be cut across the posterior pillar of the inguinal ring it is destroyed without remedy in both sexes, and in the male an important artery," (the spermatic) "will always be cut." This, he says, has been proved by experiments made in the Hotel Dieu at Paris. But it is clear that in the methods of cutting the ligament across, suggested by Mr. Else, and practised by me on Ellen Livesey, the spermatic artery will not be injured. Again, in p. 16, he says, "if the Fallopian ligament be cut obliquely inwards, the epigastric artery is as liable to be divided as when the ligament is cut obliquely outwards, though a little further from its origin." But whoever will examine carefully the course of the epigastric artery, must be convinced that the incision of the ligament, in the former case, will be parallel to the artery, and consequently cannot affect it. Günz assures us that he performed the operation frequently on dead bodies, whose vessels were injected, and always found the epigastric artery divided, unless the incision were made obliquely towards the linea alba.

It may not be improper to observe here, that Gimbernat by restricting the signification of the term *Fallopian* ligament, and considering it as the anterior margin of the crural arch, (not as the whole arch or doubled tendon of the M. obliquus externus) may puzzle or mislead his readers. He tells us (in page 47) that the Fallopian ligament is not at all concerned in the operation he recommends, and (in page 16) he says, "Moreover, in all these methods, the Fallopian" (ligament) "is cut, which is perfectly useless, unless the incision be carried on to the internal edge of the crural arch." Now, if we consider the Fallopian ligament

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ligament as synonymous with the crural arch, as is frequently if not generally done, Gimbernat himself divides this ligament; and, taking it in the limited sense, which he usually does, we have very respectable authority for maintaining, that the division of the Fallopian ligament has been sufficient in many instances for removing the stricture.

13. Mr. Latta, after describing the previous steps of the operation for the crural hernia, adds, " Thus the ligament will be plainly seen, and by carefully dissecting away the fat and fascia of the thigh on each side, till you come to the insertion of the ligament, and *then dissecting it gently away from its insertion into the crest of the pubes,* the stricture will be completely removed; and this may be done without the smallest danger of cutting either the spermatic vessels in man, or the epigastric artery in woman, where these vessels are in their natural position." *System of Surgery,* vol. I. p. 281. Edinb. 1794.

Mr. Latta here directs the crural arch to be divided in the same part, in which we have found Gimbernat recommending it to be cut, and his first volume was published before Dr. Beddoes's translation. But in the two cases related by Mr. Latta, it appears, that he did not practice this method; for in the case of Mrs. H. V. he introduced a spatula under the edge of the ligament; and in the case of M. D. a grooved director, and then scratched the ligament almost completely through its whole breadth.

14. Lassus directs the incision of the crural arch to be made differently in different cases. When the hernia is situated between the femoral artery and the angle of the os pubis, the arch is to be divided upwards, and a little obliquely towards the linea alba; but, if the hernia be situated upon the femoral artery, or on the outside of it, the incision of the arch is to be made obliquely towards the os ilium. " In every case," he says, " this incision should be made as small as possible, not more than from three to four lines."—*De la Médecine Opératoire,* tome I. p. 200, &c. 8vo. *Paris,* an. 3.

15. Sabatier, when it is necessary to divide the crural arch, recommends that the incision be made in the direction of the umbilicus. He adds, " That the stricture is thus more completely taken off, because the incision falls perpendicularly on the parts which form the strangulation, and that the epigastric artery is more easily avoided."—*De la Médecine Opératoire,* tom. I. p. 150, 8vo. *Paris* 1796.

16. Ar-

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16. Arneman is of opinion that the strangulation may sometimes be removed by cutting the small fibres or filaments attached to Poupart's ligament. If the crural arch must be divided, he says, the incision should be made obliquely towards the linea alba.—*System der Chirurgie*, th. I. p. 675, *Göttingen*, 1798.

17. Callisen, when other means fail of success, directs a very small incision of the Fallopian ligament to be made, and says, that extension then always succeeds. The direction of the incision is to be determined by the situation of the crural vessels. If these run along the outside of the hernia, the incision is to be made obliquely inwards; if under the hernia, or at the inner side of it, the incision is to be directed upwards and outwards.—*Syst. Chirurgiæ Hodiernæ*, t. 2. § 749. Ed. nov. 8vo. *Hafniae*, 1800.

18. Mr. Hey is satisfied that the stricture in crural hernia is not caused by Poupart's ligament, but by another, which he calls the *femoral* ligament, situated about three eighths of an inch below Poupart's. This ligament, he says, is somewhat similar to that of Poupart, but smaller, is deeper, and runs transversely, or rather ascends, as it approaches the symphysis of the ossa pubis, passing behind and decussating the extremity of Poupart's ligament.

From a careful perusal of the description and an attentive examination of the two plates which accompany it, it appears clear to me, that Mr. Hey does not understand by *femoral* ligament, the acute posterior margin of the crural arch, but a ligament situated lower on the thigh than the anterior margin of the arch. Indeed, we find him pointing out in the explanation of plate 4, letter *k*, " the femoral ligament *formed in the fascia of the thigh*, or anterior layer of the aponeurotic sheath of the great femoral vessels." He informs us, that the division of the femoral ligament may be executed without danger to the spermatic or epigastric artery, and gives the following directions for taking off the stricture. " If the tip of the finger can be introduced within the femoral ring, to guide the bubonocele knife, a small incision (for the ring is narrow) will be sufficient to set the parts at liberty. If the tip of the finger cannot be introduced at the proper place, a director with a deep groove must be used instead of the finger, but I prefer the latter. The finger, or director, should not be introduced very near the great vessels, but on that side of the intestine or omentum, which is nearest to the symphysis of the ossa pubis. *The incision may then be made directly upwards.*" p. 153. Mr. Hey therefore neither cuts the same ligament,

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ligament, nor in the same direction, in which Gimbernat does. Yet Dr. Monro, jun. says, "As an additional argument in favour of Mr. Gimbernat's method of operating, I may add, that it is not essentially different from that recommended and practiced by Mr. Hey of Leeds." *Observations, &c.* p. 95.

The Doctor appears to have fallen into another error, in the explanation of his own plate 3. fig. 1. He points out the portion of the posterior edge of the crural arch, comprehended betwixt the letters *c* and *d*, as the part divided by Gimbernat. But this portion of the arch appears to my eye free and unattached to the os pubis, whereas Gimbernat divides the internal foot of the arch, which is nearer the symphysis pubis even than the letter *d*.

The femoral ligament, described by Mr. Hey, and considered as distinct from the crural arch, is in my opinion a mere accidental occurrence, nothing more than a portion of the fascia of the thigh, that happens to press more strongly upon the subjacent parts than the rest. The author makes the following observation concerning this ligament in page 154. "When this is examined by dissection, it will be found to resemble the inferior border of the aponeurosis of the external oblique muscle of the abdomen. In those subjects, which I have dissected on purpose, *I have not found it equally distinct*, but it has been in all of them sufficiently apparent." I do not recollect to have met with any such ligament, either in operating for the crural hernia, in examining the bodies of two women who died of incarcerated crural hernia, or in the numerous cases, in which I have examined the crural arch of persons who have died from other causes. Since I have had the satisfaction of perusing Mr. Hey's valuable volume, I have had an opportunity of examining with considerable attention the crural arch on both sides in a female, who died of a bubonocele, yet I could not find any traces of the ligament under consideration. When a finger was passed down from the abdomen through the crural rings in this case, the principal stricture arose from the thin posterior margin of the crural ring.

From Mr. Hey's description and plates it appears to me, that where a stricture is produced by what he names the femoral ligament, this would be effectually taken off by dividing the fascia over the whole of the hernial sac up to the anterior margin of Poupart's ligament. But I know that such a division of the fascia, in some cases at least, has not proved sufficient to remove the stricture, and that it

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it has been necessary to cut through the crural arch to take off the strangulation, where this was not produced by the neck of the hernial sac. I am therefore induced to believe, that Mr. Hey was not always wrong in presuming formerly, that he was dividing Poupart's ligament, when he divided the part forming the stricture in crural hernia.

[To be continued.]

To the Editors of the Medical and Phyfical Journal.

GENTLEMEN,

FROM the liberality which I have experienced from you, and from no other cause, I have presumed to offer the following remarks on Mr. Cuming's communication, on the use of white vitriol in agues.

Specifics are so fashionable, that the profession of a physician is nearly at an end, for almost every disease has its specific; and where that is supposed to be wanting, electricity, galvanism, &c. &c. or that great reflection upon common sense, the metallic tractors, are seriously recommended; O tempora, O mores!

I have had occasion to make use of white vitriol some years ago in the cure of ague. I must say I have a good opinion of it; I think it answered the intention pretty well, but I thought cuprum ammoniacum* rather preferable as a tonic in the cure of ague.

The solutio mineralis arsenici, has often disappointed me in the cure of ague, which first led me to make use of those medicines.

I never much admired this solution, I always supposed (not to enter fully upon the subject) that it injured the tone of the stomach, and from consent, the brain, nervous system, &c.

I have very frequently given those tonics with very great success in the cure of hooping cough, and periodical pain of the head, &c. but I will not say they deserve the name of specifics.

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* Cupr. ammon. ℈j. Mic. panis ʒij. Syr. cort. aurant. q. s. m. f. pill. No. xxiv. Capt. j. vel ij.—iij. (sensim augendo dosin) hora decubitus quotidie.

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Cinchona has with me frequently failed in the cure of ague; I have often been much astonished how this medicine acquired so very high a character; I am confident it does not deserve it.

Dr. James's powder, so much celebrated in the cure of fever, has not, in my opinion, done more harm than cinchona.

The word specific, I very much dislike; to me the sound is empirical; it is wonderful that I should not be acquainted with one; even in lues, in some particular cases under certain circumstances, I have seen mercury fail of the desired effect.

My patients could never take the quantity of white vitriol* mentioned by Mr. Cuming; in my practice, and from observation, I cannot think it deserves the epithet specific.

I certainly agree with Mr. Cuming that it is a medicine worthy the attention of medical gentlemen, and this is all I would wish to say; for if the practitioners in Essex and Kent, hope to meet with a specific in white vitriol in the cure of ague, they will be miserably disappointed. I believe a sea voyage, or a long journey, will answer in those cases as a more powerful specific. I have always thought so; and indeed, to be candid, which I sincerely wish to be, I must say, that during the time the Northumberland Militia was quartered in Essex, that I never could cure the hardy Northumbrian, so long as the remote cause was constantly applied. The inhabitants resist the disease in a certain degree, perhaps from habit; and in them, the cure is less difficult.

Stamfordham, Northumberland, December 19, 1803.

I am, &c.
WALTER SCOTT, M.D.

P.S. Zincum. The preparations of zinc are employed principally in external applications, as ophthalmics. Internally they have been recommended in epilepsy and other spasmodic affections, both alone, and with cuprum ammoniacum; and some think they prove an *useful* addition to the Peruvian bark in intermittents. Vid. Edinburgh Dispensatory, p. 265.

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* Zinc. calc nat. gr. vj. Chel. cancr. ppt. ʒiſs. Sacch. alb. pulv. ʒ ß. m. [illegible]alv. in chartul. vj. dividend. capt. j. mane et vesperi quotidie.

To

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

AT a time like the present, when the small-pox are so prevalent, the illustration of any cases, which may tend to avert or lessen an impending evil, appears to me important.

With this view I beg leave to lay the following before the public:

About a twelvemonth ago, Diana Deemar, a girl four years old, caught the infection of the small-pox. Her mother brought her to me, with her sister, Elizabeth Deemar, a child about eighteen months old, to the New Finsbury Dispensary, to which institution I was then physician.

Both children slept together in the same bed.

The variolous eruption in Diana Deemar was at the height.

Elizabeth Deemar had a puny appearance, laboured at the time under the hooping cough, and suffered much from dentition.

Notwithstanding these disadvantages and the little prospect of success, added to the risque of an imputation of blame being attached to my professional character, I recommended to the mother to have the child inoculated for the cow-pox. It was done.

In the course of the first week the inoculated arm had a promising appearance, and I was in great hopes of success. In this, however, I was disappointed, the part inoculated had inflamed, but did not exhibit the genuine characteristics of the vaccine pock, and by the tenth day the inflammation was almost gone. I would then have repeated the inoculation, but did not for want of vaccine matter.

On the 16th day from the inoculation, I procured some recent matter from the Bloomsbury Dispensary, with which I inoculated my little patient the second time. No symptoms of small-pox had hitherto appeared. In less than four days from the second inoculation, the genuine vaccine pock appeared on the arm where the first inoculation had been performed, and presented the appearance of what is usually observed on the eighth day of inoculation.

Shortly afterwards there appeared about seven pustules,

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the greater number of which were on the face; all these died away within three days.

I would only observe, that in the above case there can be litttle doubt of the variolous contagion having entered the system, as appears from the spurious pustules, which subsequently shewed themselves; this was counteracted and rendered in a great measure effete by the first inoculation. It seemed to require, however, a second inoculation to insure the victory of the vaccine pock.

The sequel of the case is, the child soon recovered from the hooping cough, and every distressing symptom arising from dentition; and has in the course of the last twelve-months enjoyed a much better state of health than she did prior to the inoculation.

The father's name is Joseph Deemar, who lives with his family at No. 11, Green Street, Theobald's Road.

On the fifth instant, I was desired to see a child named Elizabeth Roffy, nearly six months old, who was ill of the small pox, and the seventh day of the eruption. The child was suckled by a Mrs. Cave, who also gave suck to her own child, Mary Ann Cave, a girl about a month older than the other. Mrs. C. had also a son named John Cave, two years old.

I recommended to the mother to have her own children inoculated for the cow-pox, which was done the following day, the sixth instant. In a few days the usual marks of infection having taken place, appeared in the boy, and went through the common course. On the 16th, however, several pustules shewed themselves on different parts to the number from twelve to eighteen, all which died away in a few days, and never put on a purulent form.

In the girl, the inoculated parts seemed to be not a little inflamed the first five days, but disappeared on the seventh day of the inoculation, viz. the twelfth instant. On this day, the inoculation was repeated.

On the thirteenth, an eruption appeared on the face and different parts of the body, which left no doubt of its being the small pox, and which turned out to be of the confluent kind.

In this case the attempt to dislodge the enemy failed. I am of opinion, however, that the virus of the small pox, previously introduced into the system, was somewhat meliorated by the vaccine inoculation, and I entertain the hope that the child will utimately do well, at least this appears

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appears to me to be the case on the day in which I now write, viz. the 22d instant.

On the 6th instant, Catherine Bold, a child four years old, was seized with the confluent small-pox of a very bad kind, and died on Friday the 16th instant.

The mother brought her brother, Edmund Bold, a child two years old, to the station of the Jennerian Society, in Castle Street, King's Mews, to be inoculated for the cow-pox, which was performed by Mr. Cullrune, of Pimlico, on the 12th instant.

I saw the child with Mr. Cullrune on the 19th. The inoculated arm had the usual appearance. A few days before, seven or eight pustules appeared on different parts of the body, but these had died away by this time.

The father, William Bold, a journeyman tradesman, lives at No. 7, Old Round Court, in the Strand.

On the 24th ult. Elizabeth House was seized with the small pox, which made their appearance on the same day. She died on the 4th instant.

Mr. Diamond, of Holborn, who had been consulted on the occasion, recommended to the mother to have her little boy, about eighteen months old, inoculated for the cow-pox. This was performed, I believe, by Mr. Waschel, of the Small-Pox Hospital, on the 2d. instant.

The inoculated arm discovered the usual appearances of the infection having succeeded.

On the 11th instant, the small-pox made their appearance, which were very distinct and rather numerous; these turned however on the seventh day, and the child underwent a mild disease.

On this case I would observe, that both the infections seemed to have contended for victory, and between them it may be said to have been a drawn battle.

To the above cases, I beg leave to subjoin one of the casual cow-pox; it is meant as an answer to the few sceptics who still doubt the efficacy of the vaccine pock, and by whom I have heard it stated that the cow-pox was only a security against the small-pox for a few years.

It is needless to add that the objection was made without any foundation; and I trust that, ere long, such opinions, like the clouds vanishing before the splendor of a meridian sun, will be annihilated before the cause of truth.

About fifty years ago, a Mr. Packer was a servant to a farmer in Brydon Forest. He was then employed daily in milking ten or twelve cows. In this business he was

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affected with the cow-pox in one of his hands, and underwent rather a severe disease.

Sometime after he went and lived as a servant with a Mr. Byam, surgeon, in Cirencester.

Mr. Byam going to inoculate his own child for the small pox, proposed that Packer should also undergo the operation, which was done, but he did not take the disease. He was afterwards exposed on different occasions to the variolous infection, but was never affected by it. He was much at a loss to account for it until within these few years.

The old gentleman now lives at No. 3, North Street, John Street, Tottenham-Court Road.

I am, &c.

Prince's Place, Lambeth,
December 22, 1803.

ALEX. ABERDOUR.

P. S. The prognostic which I gave respecting the child Mary Ann Cave, has been verified. The pustules contained a reddish kind of serum, and none of the brown yellow purulent matter of the small-pox. Their figure was a medium between the flattened surface of the vaccine pock and the conical apex of the distinct small-pox.

The secondary fever ushered in by a few short rigors, was of short duration; the fœtor, the tumefaction of the face, and the salivation, which attend the confluent small-pox, were wanting in this case.

The common saline mixture with small doses of antimonials, gentle laxatives, an attention to cleanliness, and the antiphlogistic regimen, constituted the whole of the treatment. Blisters and opiates were unnecessary. The breast supplied the child with her only food.

Out of several hundred cases of confluent small-pox, which I have in the course of practice had occasion to see, this case is without exception the mildest confluent disease I have ever witnessed.

From the cases above related, I am decidedly of opinion, that practitioners have it in their power to arrest the progress of small-pox, although the disease may have entered into a family. The chief obstacles are the prejudices which still exist among the lower classes of the community.

A Case

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A CASE OF AMAUROSIS *successfully treated by* ELECTRICITY; *communicated by* Mr. RICHARD SMITH, *of Chertsey, Surry, Member of the College of Surgeons.*

MRS. WILLISON, aged 37 years, by trade a straw hat maker, of a nervous irritable habit of body, afflicted likewise with dropsy of the ovarium, and labouring under complete ischuria for three years past, was attacked on the 12th of November last with a pain in the right eye, without any appearance of inflammation, (for some weeks previous to this she had found her eyes weak.) Conceiving it might arise from unusual exertion in her business by candle light, I recommended her to abstain from work a day or two, and use a slight vitriolic collyrium.

Nov. 14. Found herself incapable of elevating the eyelid, the pain had likewise affected the other eye; complained of a violent throbbing pain in the head, very different from a common head-ach she is sometimes troubled with, appearing to be, by her description, about the region of thalami. nerv. optic. the pulse slow and very full. In the evening she was incapable of raising her head from the pillow; both eyelids were now closed. On separating them, I found the pupils much dilated, and the retina insensible to the light of a candle placed close to the eye. Finding circumstances thus, I immediately took away ℥xij of blood from the arm, applied leeches to the temple, a blister to the crown of the head, and one behind the left ear; gave her calomel gr. ij. 4tis horis.

15. Found herself the same. Blisters having discharged well; I kept them open with cerat. canth. and gave her the following draught, as she was extremely low.

℞. Tinct. castor. et valer. am. a ʒj. infus. cascarillæ ℥jss. f. haust 6ta. quaque hora sum cum pil. supra.

She pursued this plan without any apparent benefit until the 25th, when I was anxious to try the effect of electricity. Presuming the seat of disease to exist in the brain, I doubted the power of the electric aura to reach it; after a few sparks about the head and eyes, I directed some smart shocks through the brain, which gave, as I expected, much pain; I then left her until the following morning,

26. When I found the result to have exceeded my expectation. She had perceived a slight ray of light, and thought her head easier than the preceding day; in the evening I repeated the shock.

27. Found

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27. Found her much better; could elevate the eyelids a little, and perceive light.

28. Much better; she now perceived large objects in the room, as the chairs, &c.

Dec. 1. Vision so far restored as to render the application of electricity unnecessary, as she could now perceive the smallest object, and was able to pursue her work; finds no inconvenience but from unusual exertion at her business, to which she is sometimes obliged to submit for the support of a young family.

How far the medicines might act in the above case, may be worth consideration; I think it fair to impute the success to electricity alone, since the other applications produced no beneficial effect until the shocks were made use of.

Electricity has been employed in similar cases without success; but as the manner of using it has generally been the slightest possible (i. e. the aura) I trust the event of this case may give encouragement for pursuing the more powerful remedy of the shock, which may be sent through the brain without apprehension of any unpleasant circumstance accruing from it, consequently may affect the origin of the optic nerve, usually the seat of this disease.

January 1, 1804.

On the Effect of the NITROUS VAPOURS *in preventing* CONTAGION, *and arresting the Progress of* CONTAGIOUS FEVERS; *by* Mr. CHARLES GIMBERNAT, *of Madrid.*

THE public are indebted for the very useful discovery of applying nitrous vapours for the purpose of destroying contagious miasmata to the celebrated Dr. C. Smith, whose interesting work I was induced to translate into the Spanish language on the approach of a dreadful epidemic, imported into Cadiz in the year 1800 by a vessel from America, by which the whole province of Andalusia was gradually attacked, and which proved exceedingly fatal. I added to the translation, a direction for obtaining the nitrous acid pure and in white fumes, and for preventing the generation of the oxydated azotic gas or the orange-coloured fumes; this being a very essential point of the operation, as the fumes of the pure nitrious acid only, may be breathed without any trouble or danger; and I concluded

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ed with examining all the means hitherto proposed for purifying the atmosphere, and adding my reasons, why I thought the pure nitrous vapours to be the most preferable in inhabited places. The Spanish government, to which I had presented my work, resolved to elect two celebrated professors of Madrid, Messrs. Queralto and Serrais, who were to try the nitrous vapours in the alarming epidemic of Andalusia. These gentlemen having accepted the dangerous commission, repaired to Sevilla, where the malignant fever had carried off more than 12000 persons, and where the daily increasing mortality entirely overbalanced all medical assistance. On the day of their arrival in the city of Sevilla, Mr. Serrais was attacked by the fever, and two days after he fell a sacrifice to his zeal and the offices of humanity. Mr. Queralto, more fortunate than his colleague, luckily recovered from an attack of the epidemy, and immediately took the proper measures for employing the nitrous fumigations in one of the largest hospitals of the town, which was crowded with a great number of patients.

In order to put the use of the fumigations to a fair trial they were at first used only in one quarter of the city, and no other change was made in the mode of treatment which had hitherto been employed. The success however exceeded the most sanguine expectations, as the progress of the contagion was not only stopt from the very day the nitrous fumigations were adopted, but no patient was afterwards attacked by the fever in any part of the hospital. The fumigations proved also an excellent medicine to the patients; for all who lay in the wards, where the fumigations were continued day and night, found instant relief, and most of them recovered within a few days; instead of 12 persons dying every day in the hospital, as was usual before the application of the nitrous vapours, the number decreased soon after to only one in a day. Such a happy success could not fail of producing the greatest confidence in the fumigations, which were now used throughout the town, and soon adopted over all the province. In the space of three weeks the city of Sevilla, and in less than two months the whole of Andalusia was freed from the devastation of this dreadful epidemic. The confidence on the purifying property of the nitrous acid was pushed so far, that Mr. Cavanellas, surgeon to St. Luke's hospital, of Sevilla, having exposed the clothes of a person, who died with all the symptoms of the highest contagion, to the action of the nitrous vapours, put them upon his skin for

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for one day and a night, without experiencing the least contagious effect. It was generally found, that the nitrous fumes, mixed with the atmospherical air, occasioned no trouble to the breathing person, which is not the case with the simple muriatic gas, and much less with the oxygenated gas, both of which violently attack the organs of respiration; on which account they cannot be safely employed in inhabited places, but only for purifying wards from which the patients have been previously removed.

Dr. Smith's method has been altered by Mr. Queralto, this gentleman effecting the decomposition of the nitre in the cold, and not employing any heat, as has been done in the experiments made in England, and by which oxygenated azotic gas is frequently disengaged instead of nitric fumes; because, any surplus of heat is capable of separating the affinity which unites the oxygen with the azote.

This circumstance, however, is not to be apprehended, when the decomposition is undertaken in the cold, and in small quantities, whereby the nitrous acid will be volatilised, without being decomposd by means of the heat disengaged through the sulphuric acid penetrating the kali. The reason why the nitrous vapours do much less affect the organs of respiration than other acids, is perhaps because they are composed of the same constituents as the atmospherical air. It may be likewise suggested, that the nitrous vapours are of all others the best appropriated for destroying contagious miasmata, because they are not a permanent elastic fluid or a true gas, but mere fumes, volatile by means of the heat, which, when cooled, are condensed round all bodies, penetrating their interstices and surrounding their surfaces with an acid; and from this condensation the perfect neutralization of all the atoms of the contagious matter must be derived. But whatever ground these conjectures may have, it is sufficiently proved by the evidence of facts, that fumigations with nitrous acid are capable of destroying in a short time the contagious matter, by which malignant fevers are occasioned; that the organs of respiration remain unaffected; and that Spain, and perhaps Europe, derives the greatest benefit from their effect, in escaping the terrors and devastations, which so often alarm the United States of America.

OBSERVATIONS

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Observations *on the* Use *of* Celandine (*Chelidonium*) *in the* Venereal Disease, *by Professor* Wendt, *of Erlangen.*

THE expectations of medical men have been so frequently frustrated, in respect to the discovery of a medicine for the venereal disease, which might serve as a sure substitute for mercury, without being attended with the disagreeable consequences often observed after the continued use of mercurials, that the introduction of any new remedy to accomplish the much desired purpose has always been received with prejudice. However, the results of experience, relative to this subject, are extremely contradictory; and while some physicians assert they have cured many venereal patients by the sole use of vegetable and similar remedies, the observations of others are calculated entirely to discredit them; a fate which the famous decoction of Guajar, so greatly praised by an early writer on the venereal disease, Chevalier de Hutten, has shared with Astragalus exscapus, Clematis erecta and vitalbæ, Sarsaparilla, Dulcamara, Carex arenia, Nitric acid, &c. Although I cannot account for these results, yet they appear to me to prove, that no certain evidence is given for or against the use of such remedies, which may be considered as decisive on either side; it might therefore, even from this circumstance, be excusable in venturing to publish another; the more so, if it be approved by experience and the evidence of facts.

The remedy I allude to is the common Celandine (Chelidonium majus, L.) which plant has long been celebrated in several disorders, and which I know, from my own practice, to be an excellent medicine in obstinate agues, obstructions of the liver, jaundice, exanthemata, &c. I had, however, never employed it in the venereal disease till I was accidentally informed that Dr. Hechtel, of Bayreuth, made an extensive use of it in the cure of that disorder. Accordingly, I gave the Celandine a trial by employing it in about twenty cases, wherein I succeeded far beyond my expectation. Although I was greatly importuned to make the remedy known to the public, I withheld the discovery for the following reasons; First, because the cases in which I had successfully employed it, did not seem to me wholly sufficient for ascertaining the fact; Secondly, because I imagined my patients might have used mercurials before the time they applied to me, or even during

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during the period they were under my care; an imposition which not unfrequently happens to physicians; and, Thirdly, because I did not think myself entitled to make public a remedy which I knew was kept secret by Dr. Hechtel, without having previously obtained his permission. I therefore wrote to the Doctor, and acquainted him with the means by which I had procured information respecting his remedy; I also related to him the successful use I had made of it, and intimated to him that it would be of infinite utility were the medicine published for the benefit of the community. In a few days after the Doctor returned the following answer.

"I have used that remedy (celandine) longer than eight years, during which time it has done me the greatest service in more than fifty cases, some of which were so obstinate, as even to withstand the effect of mercurials. I order pills, of two grains each, to be made of the extractum chelidonii and the radix chelidonii, and I prescribe my patients two in the morning, and two at night, increasing the dose by degrees from twenty to thirty, which are taken twice pro dosi; afterwards I gradually diminish the dose in the same manner I had increased it. In some of my patients the remedy would cause a diarrhœa, which I arrested by discontinuing the medicine for some days; while, in others, it produced profuse sweats, a symptom I always disliked, as it considerably retarded the cure. I shall be glad if you will undertake the publication of a remedy, which is approved by your and my own experience."

Much, however, as I rely on the evidence of so able a practitioner, I am far from thinking his remedy to be infallible, yet from the success with which it has been given, both by him and by me, it seems to be deserving of farther trials, and it would afford me particular satisfaction, if I could persuade medical men to examine this remedy in their practice, and afterwards to communicate the results, whether successful or unsuccessful, of its internal application.

In summer I generally give the juice of the radix and herba (succus expressus) with honey, and diluted with water; first, in the dose of a tea-spoon, gradually increasing it to a table spoonful, which dose I order to be continued till the cure is finished. In autumn and spring I employ the succus expressus radicis chelidonii; and in winter, the extract, which is generally made of the whole plant. But as most persons dislike taking expressed juices, I generally give the following pills;

℞. Succi

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℞. Succi recenter express. hb. et rad. chelidonii majoris aa. unc. iij. inspiss. leni caloris gradu ad consistent mellis. dein adde pulver. radic. chelidon. major. q. v. satis ad consistentiam massæ pilularis; ex qua formentur pil. pond. gr. ij. consper. pulver. lycopodii. serv. usui.

Of these pills I order two to be taken in the morning and evening, daily increasing the dose by one pill, till I have raised the dose to ten pills, which I continue till the cure is completed. I have often employed the herb and the root, each separately, and the latter appeared to me more efficacious. If it be intended to quicken the cure, I prescribe the pills to be taken every three hours. I have not yet observed any symptom, which could prejudice the use of this remedy, as diarrhœas, sweats, or salivation, but only found that in some cases it diminishes the appetite, which however is easily remedied by stomachics.

Case I. A stout labourer, aged thirty-seven, applied to me for assistance. As he complained of violent pain in the right testicle, which was extremely swoln; the pains extended to the crista ilei and the perinæum, and the glandulæ inguinales were likewise swoln and painful; I immediately ordered a suspensorium to be applied, and gave him the pills in the manner I have mentioned. The first four or five days no abatement in the pains and swelling could be observed; but after this time both complaints considerably decreased, and a gonorrhœa supervening, the pains and swelling almost entirely ceased. Having continued the remedy about three weeks, he recovered so far that he could again follow his business.

Case II. The wife of the last mentioned patient, who had most probably been infected by her husband, complained of a burning sensation which she felt on discharging her urine, of pains in the throat, and of hoarseness. On examining her, I found several ulcers behind the tonsils; I ordered her to gargle with water and honey, and gave the pills of Chelidonium. When she had continued them about five weeks, she found herself cured.

Case III. A boy, fourteen years of age, who was born of venereal patients, complained of pains in the inguinal region, and some time after a swelling was observed in the right side, on which a surgeon applied a plaster; but the swelling and pains increasing, the tumour broke, and then formed an ulcer, on which the emplastrum diachylon simplex

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plex was put. When he was brought to me, I found the ulcer very foul, and discovered similar ulcers in the fauces. He was directed to gargle with honey and water, the ulcer in the inguen to be dressed with four parts of unguent. dig. off. and one part of unguentum Ægypticum; and internally he took the pills of chelidonium. By this treatment he was cured in the space of four weeks; but having afterwards caught a violent cold, which threatened a relapse, he had recourse to the pills, and was entirely freed from his complaints.

Case IV. With the same success I cured a young man of a phymosis, applying at the same time some external remedies, particularly the balsamus sulphuris, prepared with oleum lini, with which the swelling of the prepuce was dressed, and I injected likewise a decoction of scordium between the glans and the prepuce.

Case V. A young man, aged nineteen, being infected with the venereal disease, committed himself to my care. After the disease had lasted for ten days, during which time he had used a decoction of sarsaparilla and graminis without any avail, I found three ulcers on the prepuce, one of which had eaten very deeply, and several complaints were observed in the fauces; the tonsils and uvula were swoln, and covered with a yellow purulent matter. In order to try the effects of chelidonium I employed no mercurials, but prescribed the following pills.

℞. Extr. chelidon. maj. dr. jß. f. pil. ponder. gr. ij. consp. pulver. hb. chelidon. D. S. two pills to be taken in the morning and at night.

For gargling I recommended oxymel simplex with water, and the ulcers I covered with dry lint. Three days after he got much better, the complaints in the fauces had entirely ceased, the ulcers of the prepuce had a better appearance, and were cleaner; but about this time the patient having heated himself with wine, had a great deal of pain in the inguinal glands, which began to swell. I applied on them pieces of linen spread with extractum chelidonii, and ordered six pills to be taken every day, by which means I not only removed this new complaint, but the ulcers were cured in less than three weeks. The patient however continued the medicine a fortnight longer, and was then completely cured.

Case VI. A young man, 23 years of age, who two years ago had been afflicted with complete lues, in which he was treated

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treated by a barber, retained a purulent running of the urethra, which was extremely troublesome. I prescribed him three pills per day of the chelidonium, which having continued some days the running began to diminish; but as it again increased, I raised the doses from four to six, whereby the gleet gradually decreased; after some weeks it entirely ceased, and has never since returned.

Case VII. A girl, eighteen years of age, had every symptom of venereal infection, difficulty of swallowing, swelling of the palate, pains in the urethra, &c. I accordingly prescribed, Extr. chelidon, dr. ij. pulv. cort. Peruv. q. s. ut f. pil. pond. gr. ij. consp. pulv. cinnamonni d. s. six pills to be taken every day, and gradually to increase the dose. When she had used this medicine for about a fortnight, all the venereal symptoms gradually disappeared, and the patient finding herself recovered, could not be prevailed upon to continue the medicine any longer.

Case VIII. Another woman complained of the same symptoms as the last mentioned patient, though in a less degree. I prescribed as follows: Extr. chelidon. dr. ij. taraxaci dr. ß. pulv. cort. Peruvian. q. s. pilul. ponder. gr. ij. consperg. pulv. cinnam. I ordered her at first to take six pills a day, but by degrees to increase the dose to twelve, and she had hardly consumed the prescribed quantity, when she found herself free from all the venereal symptoms.

In all these cases I employed no other medicine than the chelidonium, and it surprized me therefore, when I met with several cases in which I gave this efficacious remedy without effect. It so far discouraged me, that I gave up all thoughts of farther employing it in the venereal disorder. Considering, however, that the ill success which happened to me in several cases might be owing to the inordinate use of that medicine, which patients of this kind are very apt to, and to the disorderly manner of living so frequently observable in venereal subjects, but particularly at the request of some of my friends, I again had recourse to that remedy. I also determined to make a trial of the chelidonium glaucium; L. or yellow-horned poppy, a plant frequently cultivated in our gardens; and I had the satisfaction of curing several cases without the assistance of any other medicine; in some, however, I used mercurials externally. I either gave the fresh succus expressus of the root

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root and herb in the dose of a tea spoonful every three hours, or in form of extract, viz. Extr. chelidon. glaucii q. l. pulver. glycirrhiz. q. s. ut f. pil. ponder. gr. ij. involve pulv. fab. d. s. two pills to be taken every three hours. This dose I gradually increased, as circumstances allowed; it would sometimes cause vomiting and diarrhœa, in which case I diminished the dose. For gargling and fomentations in phymosis and paraphymosis, and for washing the ulcers and warts, I applied the juice of the same plant or the extract, both diluted with water.

Case I. A young woman was affected with venereal ulcers in the fauces, and ulcers and warts of the genitals, which even extended to the anus; at the same time she had a very malignant fluor albus. After having used the chelidonium glaucium, in the manner just stated, internally and externally, for about three weeks, the ulcers began to heal, and the warts to dry and to fall off; the fluor albus diminished and became less corrosive.

Case II. With the same success I employed the chelidonium glaucium in a case of phymosis, and chancres of the genitals.

Case III. A young man was afflicted with a very bad paraphymosis, in which the glans was swollen to an enormous degree; the opening of the urethra was so compressed that not even the smallest bougie or catheter could be passed, I therefore proposed the operation for paraphymosis, with which however the patient would not comply. I then ordered the parts to be fomented with warm milk, and by degrees with diluted extract of chelidonium, and gave him the pills, by which treatment the patient gradually recovered in the course of five weeks.

Case IV. A gentleman, aged fifty-six, had frequently exposed himself in his youth to venereal infections, after which he had retained a hardness and tumour of the right testicle, a curvature of the urethra, and a gleet, which frequently returned. These circumstances however did not prevent him from marrying and having several children; and though these symptoms could not be considered as venereal, he wished to get rid of them. I accordingly gave him the pills of chelidonium glaucium, increasing the medicine till he took ten at each dose, which after some time completely relieved him from those complaints.

To

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE chief source of dispute respecting the action of opium on living animals has been the question, whether it is a stimulus or a sedative? On the subject of stimulus and sedative so much has been written, that it seems at first sight that nothing new can be said on it. If, however, the attention be directed rather to the phenomena of animal life than to prevalent opinions, we shall, I think, be led to conclusions in some respects different from those hitherto advanced.

By stimulus is meant that which excites, by sedative that which depresses, the powers of life. The late Doctor Brown maintained, that the idea of a sedative is unfounded; and that wherever a depression of the powers of life takes place, it is the consequence either of the abstraction of stimuli or excitement. But has not death been the immediate consequence of a large quantity of spirit of wine suddenly received into the stomach, of some of the passions, &c? We also find loss of power, without previous excitement, the consequence of agents whose action is confined to, or chiefly exerted on, the muscular system. When a considerable quantity of an infusion of opium or tobacco is thrown into the heart of a frog, it does not excite violent contractions followed by a loss of excitability, but instant paralysis.

Laying aside Dr. Brown's hypothesis, shall we find the prevalent opinion, which divides all agents into stimuli and sedative, more consistent with observation? We see the foregoing agents, the passions of the mind, opium, tobacco, &c. acting as sedatives; where then are we to look for stimuli? To the same agents; for all of them, if applied in a less degree or quantity, excite the powers of life. A small quantity of spirit of wine received into the stomach, occasions excitement. There is no passion which may not act as a stimulus; fear itself, when not in such a degree as to overcome the powers of life, gives temporary vigour. It is unnecessary to allude to the numberless experiments and observations, which prove that opium and tobacco, applied in small quantity, occasion excitement.

The same, I believe, will be found true of every other agent. Applied to a certain extent, they all excite the powers of life; beyond this they depress or destroy them.

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If so, we cannot regard any agent as merely stimulant or sedative. It is true that some possess more of the stimulant, others of the sedative power; but all seem capable of producing both effects. And that the latter effect is independent of the former appears from this, that the one bears no particular proportion to the other, which, were the sedative a consequence of the stimulant operation, would be the case.

Opium then, like other agents, acts both as a stimulus and a sedative, according to the quantity applied; and this seems to be a principal cause of the difference of opinion which has prevailed respecting its operation. But whether it is received into the circulating, or acts only on the nervous, system; and on what parts of the system it makes its impression in producing each of its effects, can only be determined by experiments made for the purpose. The limits of this Paper will not permit me to enter into a detail of these experiments, for which I must refer to an Essay published some years ago, or a volume which will soon appear, and the works referred to in them; and here confine myself to the general result.

From these experiments it appears, that the effects of opium on living animals may be divided into three classes. Its effects on the brain, on the heart and blood-vessels, and on other parts of the system.

The last do not essentially differ from those of other local irritations. A powerful impression made on the nerves of the stomach is sufficient to destroy life. But opium, although the impression made on the nerves of the stomach by a large dose is very considerable, seems never to occasion death in this way.

The effects of opium on the heart and blood-vessels are that of increasing their action when applied in small quantity; and that of impairing or altogether destroying it, when applied more freely: effects differing in degree but not in kind from those of other agents.* It does not appear that the quantity of opium absorbed by the lacteals from the largest dose, is sufficient to destroy the muscular power of the heart merely by its action on that organ. It may safely be asserted, that opium never kills by destroying the muscular power of the heart, except when a large quantity is injected into it, or into the blood-vessels.—

Opium

* The effects of opium immediately applied to any other muscle are the same.

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Opium received into the stomach, therefore, never induces death in this way.

It is ascertained by the experiments alluded to, that the action of the strongest solution of opium, applied to the heart, is merely local; it destroys the excitability of this organ, but it produces no other effect. The excitability of all the other muscles remains unimpaired. It is almost unnecessary to observe, that I here speak of the effects of opium when it is confined to the heart; if it is allowed, in the course of circulation, to pass to the brain, it produces those effects which have been ascribed to its action on the nerves of the heart.

The effects of a small quantity of opium, applied to the brain, are similar to those of other gentle impressions made on this organ, but more powerful, impaired sensibility, languor, sleep. Applied to the brain more freely, it produces effects similar to those of other violent irritations, convulsions and death. And this, it appears, is the way in which opium proves fatal. It is taken up by the lacteals, and, in the course of circulation, applied immediately to the brain. According to the quantity thus applied, it produces sleep, convulsions, or death; for opium, even in the human body, does not always prove fatal when it induces convulsions.

I am, &c.

Worcester, Jan. 12, 1804. C. PHILIPS WILSON.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IN the Med. Journal, No. 59, p. 551, there is a Case related by Mr. Dunn, which he asserts to be phthisis pulmonalis, and that he cured it by digitalis. "E. Coulston, about five or six weeks from (I suppose he means before) the commencement of this history, had been attacked with fever of an inflammatory nature. She had been bled by a medical gentleman two or three times, and taken nitrous medicines; that an affection of the lungs took place, plainly evincing a translation of morbid matter to those organs; that blisters and nitre had been used to little purpose."

The above is an imperfect account of the origin of the disease. We are not told whether the fever was attended

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with topical inflammation or not; nor, if there was, where it existed; whether pleuritis, or hepatitis; nor where the blisters were applied; nor from whence the morbid matter was translated to the lungs.

Mr. D. goes on to describe (he says accurately) the condition in which he found her on the 24th of June, 1803, six or seven weeks after the commencement of the disease, "A violent cough, great pain, and spasmodic action of the diaphragm, drawing in the scrobiculus cordis; a rattling noise in the throat; expectoration of a great quantity of thin matter; (was it purulent?) great emaciation, yellow countenance, hectic flushes, colliquative diarrhœa, dyspnœa; pulse quick, hard; loss of appetite, pain in lying on the left side."

I suspect the disease in the lungs to have been a secondary affair; and from the complaints about the diaphragm, scrobiculus cordis, yellow countenance, and, as he afterwards says, "the drawing in of the umbilicus, which all along had been productive of great pain and distress in coughing," I am inclined to believe the original disease to have existed in the liver, as the parts principally affected are closely connected with that organ.

He gave "gtt. ij. tinct. digital. every four hours in an oleaginous mixture with a small quantity of nitre.

June 25, gave gtt. iij. every four hours.

26. Ditto.

27. Cough considerably abated, diarrhœa almost gone, expectoration less, and thicker; feet swelled; gtt. iv. 4tis horis; cough worse in the afternoon, &c.

28. More cheerful, less fever and cough; had expectorated, since yesterday morning, a great deal of tough viscid phlegm, consisting of fibres and threads; complained of an itching in the nose and about the anus, with costiveness. He suspected worms in the intestines. Gave a purging powder.

29. The powder operated five or six times, and brought off a quantity of dark coloured fæces, and so black that if there had been worms they would have been indiscoverable; gave gt. vj. 4tis. horis.

30. Much better, all the symptoms relieved, more cheerful; slept a little, pulse about 70."

The state of the pulse now may be called a natural and healthy state, and is the first, and the only, time Mr. D. has mentioned the number of strokes in a minute through the whole of the case. From this day she recovered gradually

I mentioned

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I mentioned my suspicions above that the disease originated in the liver; and, from its termination, I am inclined to think they were well founded. Whence the yellow countenance, so unlike the red and white in phthisis? Do disorders in the diaphragm attend phthisis? Was ever a phthisis pulmonalis cured or checked by 90 drops of tinct. digitalis in four days? Did ever phthisis pulmonalis cease on the discharge of a quantity of dark coloured fæces? The last mentioned circumstance requires some investigation.

Mr. D. says there existed a colliquative diarrhœa on the 25th. I wish to know where the black fæces were lodged at that time, which were discharged on the 28th? They could not be within the intestinal tube; they must have been confined in some corner without the tube; and there is no corner so likely as in the large obstructed vessels of the liver. I have attended many cases of obstructions of the vessels of the liver, and could always promise a recovery when fæces of a dark colour made their appearance. But as no notice is taken of the colour of the fæces before or after the 29th, the case is imperfect; which may be accounted for from Mr. D. viewing the disease as phthisis pulmonalis, and overlooking the cause of the principal symptoms, which pointed out to me a very different disorder.

Though I value the virtues of digitalis from the good effects I have witnessed in several cases, or rather in several constitutions, for it appears to have very different effects in the same disease in different patients, yet I do not expect that it will ever perform a miracle, such as the case above would appear to be.

If these remarks meet with your approbation, so as to be honoured with a place in your Journal, and if they should fall into the hands of the unknown gentleman who attended E. Coulston from the first, a few lines from him, describing the origin, progress, and symptoms during his attendance, would be esteemed a favour.

I am, &c.

Newcastle, Jan. 11, 1804. A. FOGO.

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

A Temporary absence from home prevented me from seeing the Number of your excellent Journal for December last, till it was too late to expect that any thing then forwarded could be inserted, else the following statement should have reached you earlier.

I acknowledge myself flattered by the honour Dr. Kinglake has conferred on me by inserting the whole of the observations on cold water a second time. It must needs be a good story that will bear being twice told. The anecdote of the late Dr. Gregory, I had been in the habit of hearing so frequently repeated, even from my earliest years, by a person entitled to my utmost confidence, and one who was an intimate friend and a warm admirer of the liberal mind and manly virtues of the Doctor, that I never even doubted of its truth. Even the Editors of the Annals of Medicine allow, that such a report was prevalent in Edinburgh at the time of the Doctor's death, and which has not previously, to my knowledge, been contradicted. Dr. Kinglake's triumph does not seem very complete, even admitting the falsehood of the statement. Nothing more than a negative proof in support of his doctrine can be derived from it, as it only shews, that persons of a gouty diathesis are liable to sudden death, even tho' they do not plunge their extremities in cold water.

One reason of my addressing you at present, Gentlemen, is to express my regret at having been the cause of bringing the respected name of the late Dr. Gregory into question on so trivial an occasion; or of occasioning to the present, my much respected Master, the trouble of contradicting the statement. My error was truly unintentional; and I trust Dr. G. and his friends will consider this acknowledgment of it, as an adequate apology.

In considering me as hostile to medical improvement, Dr. Kinglake appears evidently to mistake the tendency of my observations. No man, who has taken upon himself the grave and important duty of superintending the conduct of his fellow creatures, during the melancholy visitations of bodily disease, could, I trust, be so deficient in the common duties of humanity, as to neglect or despise any species of information that would tend to mitigate pain, or shorten the duration of misery. No fault was imputed

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puted to Dr. K. for attempting to cure the gout by the application of cold water. The effects of temperature in modifying diseased action, at present attracts much of the attention of the medical world; and when they have been more accurately determined by time and experience, will in all probability extend the dominion of regular science over the functions of the living body.

To extenuate the spirit of levity and wrangling which Dr. K. has discovered in the trifling article alluded to, I shall beg his leave to use the apology employed by Horace on a similar occasion.

> O! imitatores, servum pecus, ut mihi sæpe
> *Bilem*, sæpe *jocum* vestri movere tumultus.

What, in truth, moved my bile, was the pompous manner in which Dr. K. announced the application of cold water in gout as a novel practice, originating with himself, and for which he seemed hastily to solicit the applause due to a public benefactor. A little irony appeared not ill calculated to repel such an arrogant and unfounded assumption; but the Doctor, it seems, does not like a joke.

> Ludus enim genuit trepidum certamen, et iram:
> Ira, truces inimicitias, et funebre bellum.

With your permission then, Gentlemen, I will proceed to an investigation more serious, and more becoming professional gravity and decorum, concerning the validity of the Doctor's claim to originality in the application of cold water to the cure of the gout.

To begin at the beginning, that is, with Hippocrates, Aphorism 25, sect. 5, (I need not trouble you with the Greek text) are the following words. "Tumores autem in articulis, et dolores alisque ulcere, et *podagricos*, et convulsiones horum plurima, *frigida multa affusa et levat, et attenuat, et dolorem solvit.* Torpor enim modicus doloris solvendi vim habet. The same doctrine is repeated in nearly similar words in the chapter De humidorum usu.

Among the remedies recommended by Celsus, "De manuum et pedum articulorumque vitiis," we read as follows. "Si vero tumor calorque est, utilioraque sunt *refrigerantia, in aqua quam frigidissima articuli continentur.*" Again, "Levat spongia imposita quæ subinde ex oleo, vel aceto, *vel aqua frigidissima* exprimitur."

But, to come nearer to our own times, did the Doctor, in the pursuit of his cold water lucubrations, never stumble on a work by HERMANUS VAN DER HEYLEN, entitled

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Aquæ frigidæ inter inauditas et incredibiles alias effectus podagræ dolores vel sistentis, vel mirabiliter demulcentis, et ischiadicas dolores penitus extirpantis, &c." From an English translation of this book, now lying before me, I shall treat the Doctor with a quotation.

" After shewing very clearly, that pains of the gout are caused either by a hot humour, or by an acrimonious or salt one, proceeding from the liver, VANDER exclaims,— "But seeing it is confessed and assented to by all physicians, *that contraries are cured by contraries*, why may I not lift up my voice, and make use of my pen, in the just praises of this our cold water?"——VANDER also lays claim to the discovery of the use of cold water, tho' I do not believe he was ignorant of its having been recommended both by Hippocrates and Celsus, whatever Dr. K. may be. " But suppose," says he, "that the excellent virtues of cold water in the cure of this disease were never before discovered to the world; or that other its excellencies, in other the like cases, have hitherto been neither written nor heard of:" Suppose this, I say, must the vast abyss of physical knowledge, and the large stock of the wayes of *cures* have before this been necessarily exhausted and drawn dry? Is it impossible to say or write any thing that may be deduced out of the very principles of Nature, which may be of good use in curing of the diseases men are subject unto, and particularly of the intolerable pains of the gout and the like? Certainly there are divers, that having by experience found the excellent virtue of cold water for assuaging of those horrid torments of the gout, (which are a second hell) will be ready with a very grateful remembrance, publicly to extol the same." *Van* clearly deserves the palm for modesty; he only insinuates that he would wish to be considered as the inventor of the cold water system, but does not absolutely say he is so.

Smith's Curiosities of Common Water, a well known work, which has passed through many editions, contains abundance of recommendations in favour of the use of cold water in gout and rheumatism.

But putting aside those old fashioned books, has Dr. K. never seen the modern and truly excellent Treatise of Mr. Rigby on Animal Heat. In this work the local application of cold water in the gout, and in various exanthematous complaints, is treated of in a scientific manner, and illustrated by apposite cases and legitimate deductions.

In the sixth volume of the Medical Observations, some instances of the utility of cold in the gout, accompanied with

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with many pertinent reflections by the person who was himself the subject of the experiments, may be found.

And now, Gentlemen, I will leave it with you to determine, whether any man, on the revival of a practice, which has been so frequently brought forward and again abandoned, (on good grounds or not is foreign to the present argument) be entitled to call out *eureka*, as if he were the first who had passed the pons asinorum.

Whatever may be the relative merits of the three remedies, the pump, the tincture, and the cold water, it must be allowed that there was a singular coincidence in their being ushered into public notice much about the same time. Nor do I think it shewed any very reprehensible degree of timidity in a man, whose daily bread depends on his assisting poor human nature to contend against the gout, and the other various ills that flesh is heir to, to express some degree of alarm at the combined appearance of three remedies, each in its single unaided strength promising to extirpate a complaint, whose existence has in all ages contributed so liberally to the support of every branch of the faculty, and the more so, as it commonly singles out its victims among the rich and the timid. Those fears have now indeed, in great measure subsided. Of the pump not much is heard. The tincture, though if uncontradicted rumour spoke true, supported on the wings of a genius,

Vitreo daturus
Nomina ponto,

Is gone to the tomb of all the Capulets, and is now less heard of, and probably less employed, than Dr. Solomon's anti-impetigines. And though the celebrated Hoffman wrote a Treatise de Aqua Medicina Universali, the ravages of disease have not yet ceased to limit the numbers of mankind, nor do I believe that gout is exterminated from the face of the earth.

Conscious of having trespassed too long on your patience, I now take a final leave of Dr. Kinglake, impressed with a well founded confidence that he will, in future, entertain that kind of friendship and regard for me, which a man generally entertains for another to whom he feels himself under an obligation. Dr. K. through the medium of the Medical and Physical Journal, called for materials to assist him in making a book. I have furnished him with some, and pointed out the pregnant sources of others. The quotations I have inserted, require no other authority than a reference to the books from which they are extracted;

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tracted; I shall therefore still request your permission to remain shrouded in my veil of "anonymous concealment," as Dr. K. very neatly phrases it. This determination is perhaps less the result of fear of my antagonist, than of a peculiar aversion to medical controversy. Though I will not pledge myself, that when the Doctor shall have published the book with which he has threatened the world, if I do not think his facts well established, and his deductions logical, I may not start up, propria persona, and endeavour, through the aperture of a goose's quill, to throw cold water on the whole. Till that auspicious æra arrive, I shall continue to regulate my practice in the gout as I have hitherto endeavoured to do, by the precepts founded on painful personal observation of the honest and judicious Sydenham. I am, &c.

A CONSTANT READER.

The following answer to Scepticus was receivd in the beginning of last May; but we then thought that such observations required no other answer than the very short one which appeared in the next Number. We now find however, that the same ideas are brought before the public with the pomp of a considerable quarto volume, written with great ingenuity and acuteness, and which excites very general attention. It is understood that elaborate answers to it are preparing; in the mean time we present our readers with the following short one to Scepticus.

To the EDITORS of the MEDICAL and PHYSICAL JOURNAL.

Gentlemen,

YOUR Correspondent Scepticus (see vol. ix. p. 356) has given the world some ingenious remarks on the *danger* of exterminating the small-pox. As this idea has at least novelty to recommend it, let us examine his arguments in the order in which they stand.

It is very true that "though the faculty cannot boast the honour of introducing inoculation for the small-pox, they warmly interested themselves in it." If by *warmly*, your Correspondent means to refer to the regimen with which they connected the new practice, his expression is much too *cold*. For though the noble lady to whom we owe the

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discovery, tells us that in Turkey the old women are the inoculators, and that *to take the small-pox* is, in that country, analogous to *taking the air*, yet no sooner did our physicians lay hold of the business than they shewed the *warmth* of their zeal by almost stifling their patients. Hence inoculation was in danger of being *stifled* in its birth; for though the practice was for the most part successful, yet the number of unsuccessful cases was sufficient to damp the courage of many very impartial thinkers.

At length the Suttons, under the pretence of a secret remedy said to be contained in their pills, introduced a more successful practice, which obliged all the regular faculty to look about them. At first they had recourse to the great danger which attends every bold innovation, and to discovering a few solitary instances in which the innovators had failed. But the public was not to be thus deceived, and the success of the Suttons was such as to secure them the reputation they deserved, till at last establishments were formed to which the young and old resorted, according to Lady W. Montague's expression, to take the air and the small-pox at the same time.

Matters now became serious. Surgeons kept their lancets only to bleed; physicians were no longer consulted for a complaint which had lost most of its terrors; and apothecaries neither sent in the preparative powders, the febrifuges nor opiates during the eruption and turn, nor the subsequent cathartics and sweeteners. Such a state of things could not long continue. The pills were analysed, and the cold regimen was discovered to be as old as Sydenham, though long since exploded by his *wiser* successors. Sutton therefore had no merit. His secret pills were no longer a secret, and his treatment was not his own discovery; still however the Suttons retained their character with the public, and their success entitled them to it, till by degrees their practice became universal, and every town, every village, had its stationary or its itinerant inoculator. At length an imperial physician and baron entered the lists, and the name of Sutton soon gave way to Dimsdale. It is but justice to add, that wherever Dimsdale is read, the name of Sutton will appear with not less respect than Æsop accompanies the elegant Phædrus.*

* See Present Method of Inoculating, &c. by T. Dimsdale, M. D. 1767, Introduction, p. 5. In a subsequent pamphlet, I believe, Account of Inoculation in Russia, the Suttons are mentioned by name as first introducing the cold system.

But

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But though the success of the Suttons and the sanction of the faculty, who now adopted their practice, had robbed the disease of many of its terrors, still a few solitary failures were sufficient to deter parents from undertaking this task. Your correspondent therefore conceives, that the encouragement to vaccination "breathes a higher tone of disinterestedness," but still disposed to suspect all men of some view to their own interest, speaks of medical men puffing off the "safety of the cow-pox in the public prints, and themselves obliquely, as the only beings who know how to manage it."

If your Correspondent is ever so much disposed to humor, there are certain moments when all men think it right to be grave in the midst of all their raillery; I must therefore be allowed to remind him, that in the Inventor of Vaccination we see nothing but the most enlarged philanthropy, the highest degree of liberality, and that attention to the importance of his profession which suffers nothing to escape him. None of that fury of forcing the practice down the throats of others, nor a hint that it can be better performed by himself than his groom. He is therefore not answerable for the "intemperate zeal of others," or for the manner in which *one writer* suspects the integrity of all who venture to doubt what he himself is afraid of asserting; who renders himself ambiguous by first declaring that vaccination never produces secondary *pustules*, and then, in a round about way, admits that secondary *vesicles* sometimes appear. But enough of this. Let us endeavour to relieve Scepticus from his other apprehensions, without attending to those puffs which seem to offend him so much.

As he has not pointed out the precise passage in Mr. Malthus's work, he cannot expect me to pursue the ingenious enquiry relative to the geometrically progressive increase of population and the arithmetical ratio of increasing the productions of the earth; I shall therefore only remind him of the rapid increase in the population of America, yet that she is still in a condition to supply the West India Islands and a considerable part of Europe with food. I know it will be said that America is different from Europe, because new land may be continually broken up, and even the increase of population may be exaggerated, since Europe, whom she feeds, loses a part of her inhabitants to increase those of the new Continent, and perhaps, as the whites increase in number, the ancient Aborigines become extinct. For argument's sake therefore we will admit Mr. Malthus's propositions

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propositions and the inference of Scepticus, namely, that new diseases arise to thin the ranks of mankind and equalize the principles of generation and production;" still it will not be difficult to prove, that "a due equilibrium between these opposing forces may be effected in spite of the idle interference of meddling man," in preventing or lessening disease; and this without "the necessity of war, pestilence, or famine."

I need not a better authority than that philosopher whose words are so often quoted, which he put into the mouth of the *great* King of Brobdignag. "Show me the man who will produce two blades of corn where one used to grow, and to him I will erect statues." This writer lived in an Island whose population is large for its extent, whose climate is less genial than our own, whose inhabitants are pecularly prolific, yet whose soil produces food not only for its people, but for the navy of Great Britain and some of our foreign settlements. It appears however as if this philosopher had been fearful lest Ireland should be over populous even in his days. With a sagacity therefore worthy of the author, we find him not proposing to disable men by the great pox, or to destroy children by the small pox, (practices more brutal than Chinese mutilation) but to turn this increased population to a good account, and to make an increase of offspring a real blessing to the parents. Let every poor man, says he, sell his first child to be killed and served up at his landlord's, his landlord's steward's, or the steward of that steward's table. By this traffic and sale, he will gain money enough to feed well his wife whilst she is suckling her second child, so as to enable her to fatten it sufficiently for the great man's table, and so on till advance of years puts an end to the prolific powers of the mother and the riches of the father. Surely such a practice is kinder than to suffer the poor infants to languish with a loathsome disease which renders them more troublesome whilst living, and useless when dead. I am aware that one source of astonishment to your Correspondent still remains unexplained; "that the faculty should wish to lessen the danger and mortality of a disease." 'Tis evident by this stupid astonishment that he is not of the profession. I know not therefore whether it will be considered as justifiable to admit him into all our mysteries: of this, you Gentlemen Editors must judge. It does not indeed, require much ingenuity to see, that a patient, like a soldier, can only be useful whilst living. The facetious poet therefore advises the latter to run away, that he may live to fight again;

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again; and every prudent practitioner recollects that at the death of a patient he receives no thanks but from his heir, who, how well soever he may be satisfied, has not always the gratitude to employ the person to whom he is indebted for the early possession of the estate.

Perhaps Scepticus will ask, why then should I sanction the horrid practice of child murder, if we have an interest only in the living? Forgive me, good Messrs. Editors, if I betray our order a step further, to satisfy the kind anxieties of one who is so much alarmed, lest we should suffer by our great disinterestedness. I need not remind you that the slaughter I propose is not indiscriminate, like that of the cruel Herod, but confined to the children of the poor. These, we well know, are more plague than profit. Even our most miraculous cures among them rarely bring us into fashion; we may therefore gladly save ourselves all this trouble by turning them over to other practitioners, whose time is respected in courts of justice like our own. But lest I should say too much, let me stop abruptly.

Your's,

CREDULOUS.

Some OBSERVATIONS *on the* PATHOLOGY *and* PREVAILING DISEASES *of* WARM CLIMATES; *by* A. PEARSON, *Member of the London College of Surgeons, and Surgeon in the Service of the East India Company.*

BEFORE proceeding to consider the diseases which are most prevalent in warm climates, it may be useful to take such a view of the state of the human frame in cold and in hot climates, and the changes induced by a removal from the one to the other, as our limited knowledge of the animal œconomy, and the action of external powers upon it, will allow of.

Among the inhabitants of the more temperate and colder regions of the earth, the natural constitution is that of muscular irritability and promptitude to action; the nervous mobility is not so great, the influence of that power being more equable, steady, and moderate. The solids are denser; of this there is a remarkable proof drawn from the fact, that between an European and an Hindoo or Chinese of apparently equal bulk, the difference of weight is very great, the former being much heavier. The blood contains a greater

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a greater proportion of crassamentum, and there is also a greater quantity of the circulating mass. The cuticular discharge and the biliary secretion are in smaller quantity; the power of absorption is greater, especially its action in the renewal of the solid parts of the body. The use of animal food and of fermented liquors is more indulged in, and with greater impunity. Such is the natural and the general constitution in cold climates; but adventitious modes of life alter that in very many individuals. Peculiar habits and employments, luxury and sensual gratifications, often induce the temperament of increased mobility and diminished tonic power in them and their progeny, which is in a great measure the same with that which is impressed by hot climates.

In changing from the cold to the hot climate, those effects are produced upon the frame which might be expected to arise from a constant and powerful influence acting upon an accumulated excitability, which heretofore had been accustomed to be obedient to the impression of less powerful stimuli. The circulation is increased and hurried, the respiration becomes more frequent; lassitude and languor are felt, with inaptitude to the customary employments and exertions; there is a greater susceptibility to nervous impressions, and the dispositions are more irritable; all the secretions are increased, the cutaneous and biliary peculiarly so, and the latter is also changed in its qualities, becoming more acrid. In the increase of these Nature has implanted a powerful remedy for the evils which would otherwise ensue, as, in the change taking place in the act of secretion, the fluids produced combine with a greater portion of the heat, and the temperature does not exceed 96° of Fahrenheit, whatever may be that of the surrounding atmosphere. There is also, for the time, an increased action of the absorbents, manifested by the disposition to costiveness.

In this first state, then, diseases of inflammation and of excitement will be produced, and are found to occur. A continued exposure to the effects of heat at length induces a different state of the frame. From the stimulus impressed being stronger, and from the actions of the vessels of the skin and system being greater than in a due proportion to the strength of the vital powers, or to the degree in which the muscular irritability is renewed by the actions of the system, the ultimate effect is relaxation of the fibre, and an irregular or weakened performance of the functions of the different organs. The law of the œconomy is fulfilled,

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filled, by which it appears that as debility increases, nervous mobility becomes greater also. Where the effects of climate are aided by the abuse of spirituous or fermented liquors, this irritability of frame is increased to a very great degree, and extends itself to the dispositions of the mind.

It may be of some use in illustrating the effects of climate, to advert to those of excessive stimulation from inebriety frequently repeated; and though, as will be shown afterwards, the analogy between the two is not complete, there is a considerable similarity in the state of constitution induced by both. Muscular action is by repetition strengthened, and more readily performed; that of the organs of sense or power of receiving sensual impressions is by the same means diminished. The pleasurable feelings of intoxication, as produced by the application of the liquor to nerves of the organ of taste, by the increased actions and secretions of the vessels and viscera, or by those perhaps of the sensorium itself, by combinations of the memory and imagination, are at length exhausted, and not to be again called forth; the muscular coats of the vessels are more readily induced to act, but their action, though rapid, is enfeebled, desultory, and easily interrupted.—Sometimes it is stopped, or nearly so; but this happens most readily in the lacteals and absorbent lymphatics, then giving rise to atrophy. The digestion is impaired, and the appetite irregular; the biliary secretion is at times suspended, at others increased, and probably vitiated in its qualities: the gastric secretion is most frequently vitiated. A similar libration betwixt increased and suspended action takes place in all the functions; in those also of the sensorium, on which the state of mind depends, there is an obtuseness of perception with regard to objects of external and internal sense, or to those which interest the generality of mankind, with a frequent occurrence of violent emotions from slight causes. A degree of fever becomes habitual, there is a sinking in of the abdomen, wasting of muscular substance, chronical inflammation and scirrhus of the glandular viscera, and painful sensation in parts where no sensation ought to be felt.

Such a state of health being brought on by residence in hot climates, and also being frequently met with in our own, occasioned by excessive stimulation from other causes than heat, leaves us at a loss how much to ascribe to the effect of a high temperature; the more so, that few reside in these countries without combining the application

of

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of both these hurtful powers. When the constitution has not been injured by excess in the individual, or the effects of it entailed by his progenitors, it is probable that the order of things, which has rendered an intercourse between different climates necessary, has in the œconomy implanted the power of making the change without a sacrifice of the blessings of healthful existence. We find accordingly, that observing a regimen nutritious but not stimulating, and other attentions to the juvantia and lædentia, enable many individuals to suffer it without much injury; while, perhaps, nothing can account for the Orientals having existed so long as nations, to a certain degree civilized, and their having made considerable progress in the arts of life, and even in science, but that an attention to such observances has been imposed upon them, and maintained by the tenets of their religion. It is certain that, in general, a few generations of Europeans terminate that race, and that their mental and moral existence is not even so long protracted; at least, an attention to what has happened among the nations who, in their turns, have had the dominion of the East, would suggest that inference. The density and irritability of the muscular solid, the firmness of mind connected with that, and the advantages of higher civilization, give the Europeans many advantages, which are rendered more permanent by the influence of habit; but their descendants could not retain this pre-eminence, were it not for recruits from the more northern regions.

It will perhaps be easier to specify the precautions to be observed in making the change of climate, than to point out their modus operandi, or the exact method in which the change of climate renders them necessary, and the rules for preserving health will vary according to the different constitutions, periods and habits of life; I will however take for granted that there is nothing peculiar in these respects.

In the first change from a cold to a hot climate it was formerly the practice to bleed indiscriminately; it is now perhaps too generally omitted, as it might be often employed to obviate or remove disease arising from inflammatory congestion. Purging has also been recommended for universal adoption; and when we reflect that the constitution both admits and requires this evacuation more frequently in warm than in cold climates, and bears it better, its utility will be found as probable as experience proves it to be. The neutral salts have generally been prescribed, and these are certainly of the most universal application and use

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Inf. sennæ et tamarind. p. rhei. et kali tart. separately or combined, ℈j to ʒß of the former and ʒj to ʒij. of the latter, will be best for frequent use; occasionally, four or five grains of calomel may be taken with much advantage from its effect in stimulating the mucous or biliary excretories, when some of the laxatives above specified ought to be given next morning; the day on which any of these remedies are given ought to be one of peculiar moderation, and dilution with barley-water or rice gruel attended to. In bilious temperaments, where there is a predisposition to hepatic congestion, or where there is any apprehension of the typhus icterodes, it will frequently be found a measure of useful precaution to rub a drachm of mercurial ointment into the side, or to take four of the pil. hydrargyri daily for a week, so as to induce a slight mercurial action in the system.

With regard to the use of tonics, or antiseptics, the indications for employing them, and their utility, are much less than is generally supposed. The feeling of debility is often fallacious, and produced by the organs being overloaded, or a biliary absorption; and the effect of heat in accelerating putrefaction is not applicable to the living œconomy: on the contrary, by leading to greater personal cleanliness and circulation of air, those symptoms denominated putrescent are more rarely met with. The simply bitter medicines are of doubtful safety in every climate, and there is no doubt that an habitual use of them ought to be avoided; when given, it should be at intervals, tonics of the astringent kind requiring to be accompanied with the use of laxative medicines. The food ought, in quantity and quality, to suffice for the purposes of nutrition, and of supporting the healthful action of the system; and the times of meals ought probably to be regulated by former habits, although these are different from what are generally adopted by the natives of warm climates. For breakfast, bread and little butter with tea; bread and soft egg, or the yolk only; rice and fish. Our customs have rendered tea too prevailing an article of regimen. Fruit ought to be used at first sparingly, and in the forenoon. For dinner, soups or broths, provided there is no idiosyncrasy or dyspeptic affection to forbid their use; a moderate portion of well dressed food and vegetables. The principal caution to be observed is, of not exceeding in quantity, or taking in so much as to burthen the stomach. For drink, in general water only. Wine is the least exceptionable of stimulating drinks, but unnecessary and hurtful to the young

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young and plethoric; and when the valetudinary have recourse to it, it ought to be in quantity only sufficient to occasion action of the powers, without endangering a subsequent collapse. Malt liquors are peculiarly injurious to those who are predisposed to affections of the liver, and of the biliary and mucous secretions; and spirits, however diluted, seem to have a most injurious effect on the power and activity of the gastric secretion. Melted butter, pastry, &c. are peculiarly objectionable.

If the dinner is late, supper ought to be totally omitted. Sleep ought to be taken early, for seven or eight hours, on a hair mattress, and in an airy place, but not exposed to currents of air: and such ought to be peculiarly guarded against where land winds prevail, or there is an exposure to marsh effluvia. The person ought to rise with the dawn, and at that time, if his situation permits it, to take horse exercise. Cold bathing, when admissible, is an excellent preservative against the effects of heat; and where there are no habits giving rise to plethora and visceral congestion, it ought to be had recourse to daily. To avoid much exercise in, or exposure to the rays of the sun is an injunction of obvious propriety and use; but were due attention paid to other circumstances, this might be obeyed with a latitude arising from the avocations and employments of every one. Where the frame requires it, a short sleep after dinner may be indulged in, taking care to loosen whatever may bind or obstruct the circulation. In the cool of the evening, horse exercise may be again had recourse to. The mind ought to be at ease; where that is burthened, the disposition to many tropical diseases is increased; hepatic affections are most liable to attack those who suffer from sorrow, anxiety, or disppointment.

[To be continued.]

Observations on the Chemical Nature of the Humours of the Eye. By Richard Chenevix, *Esq. F. R. S. and M. R. I. A.*

THE functions of the eye, so far as they are physical, have been found subject to the common laws of optics. It cannot be expected that chemistry should clear up such obscure points of physiology as all the operations of vision appear to be; but some acquaintance with the intimate

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nature of the substances which produce the effects cannot fail to be a useful appendage to a knowledge of the mechanical structure of the organ.

The chemical history of the humours of the eye is not of much extent. The aqueous humour had been examined by Bertrandi; who said that its specific gravity was 975, and therefore less than that of distilled water. Fourcroy, in his *Système des Connoissances Chimiques*, tells us that it has a saltish taste; that it evaporates without leaving a residuum; but that it contains some animal matter, with some alkaline phosphate and muriate. These contradictions only prove that we have no accurate knowledge upon the subject.

The vitreous humour is not better known. Wintringham has given its specific gravity (taking water at 10000) as equal to 10024; but I am not acquainted with any experiments to investigate its chemical nature.

We are told by Chrouet, that the crystalline lens affords, by destructive distillation, fœtid oil, carbonate of ammonia, and water, leaving some carbon in the retort. But destructive distillation, although it has given us much knowledge as to animal matter in general, is too vague a method for investigating particular animal substances.

I shall now proceed to mention the experiments I have made upon all the humours. I shall first relate those which were made upon the eyes of sheep (they being the most easily procured), and shall afterwards speak of those of the human body, and other eyes. I think it right to observe, that all these eyes were as fresh as they could be obtained.

SHEEPS' EYES.

Aqueous Humour.

The aqueous humour is a clear transparent liquid, of the specific gravity of 10090,* at 60° of Fahrenheit. When fresh, it has very little smell or taste.

It causes very little change in the vegetable re-active colours; and this little would not, I believe, be produced immediately after death. I imagine it to be owing to a generation of ammonia, some traces of which I discovered.

When

* All these specific gravities are mean proportionals of several experiments. The eyes of the same species of animal do not differ much in the specific gravity of their humours.

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When exposed to the air, at a moderate temperature, it evaporates slowly, and becomes slightly putrid.

When made to boil, a coagulum is formed, but so small as hardly to be perceptible. Evaporated to dryness a residuum remains, weighing not more than 8 per cent. of the original liquor.

Tannin causes a precipitate in the fresh aqueous humour both before and after it has been boiled, and consequently shows the presence of gelatine.

Nitrate of silver causes a precipitate, which is muriate of silver. No metallic salts except those of silver, alter the aqueous humour.

From these and other experiments it appears that the aqueous humour is composed of water, albumen, gelatine, and a muriate, the basis of which I found to be soda.

I have omitted speaking of the action of the acids, of the alkalis, of alcohol, and of other re-agents, upon this humour. It is such as may be expected in a solution of albumen, of gelatine, and of muriate of soda.

Crystalline Humour.

To follow the order of their situation, the next of the humours is the crystalline.

This differs very materially from the others.

Its specific gravity is 11000.

When fresh, it is neither acid nor alkaline. It putrifies very rapidly. It is nearly all soluble in cold water, but is partly coagulated by heat. Tannin gives a very abundant precipitate; but I could not perceive any traces of muriatic acid when I had obtained the crystalline quite free from the other humours. It is composed, therefore, of a smaller proportion of water than the others, but of a much larger proportion of albumen and gelatine.

Vitreous Humour.

I pressed the vitreous humour through a rag, in order to free it from its capsules; and in that state, by all the experiments I could make upon it, I could not perceive any difference between it and the aqueous humour, either in its specific gravity (which I found to be 10090, like that of the other,) or in its chemical nature.

M. Fourcroy mentions a phosphate as contained in these humours; but I could not perceive any precipitation by muriate or nitrate of lime; nor did the alkalis denote the presence of any earth, notwithstanding M. Fourcroy's assertion of that fact.

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HUMAN EYE.

I could not procure a sufficient quantity of these, fresh enough to multiply my experiments upon them. However, by the assistance of Mr. Carpue, surgeon to his majesty's forces, I fully convinced myself that the humours of the human eye, chemically considered, did not contain any thing different from the respective humours of the eyes I had examined. The aqueous and vitreous humours contained water, albumen, gelatine, and muriate of soda; and the crystalline humour contained only water, albumen, and gelatine. The specific gravity of the aqueous and vitreous humours I found to be 10053, while that of the crystalline was 10790.

EYES OF OXEN.

I found the eyes of oxen to contain the same substances as the respective humours of other eyes. The specific gravity of the aqueous and vitreous humours is 10088, and that of the crystalline 10765.

What is particularly worthy of notice is, that the difference which appears to exist between the specific gravity of the aqueous or vitreous humour and that of the crystalline, is much greater in the human eye than in that of sheep, and less in the eye of the ox. Hence it would appear that the difference between the density of the aqueous and vitreous humour and that of the crystalline, is in the inverse ratio of the diameter of the eye, taken from the cornea to the optic nerve. Should further experiments show this to be a universal law in nature, it will not be possible to deny that it is in some degree designed for the purpose of promoting distinct vision.

In taking the specific gravity of the aqueous and vitreous humours, no particular precaution is necessary, except that they ought to be as fresh as possible. But the crystalline humour is not of an uniform density throughout; it is therefore essential that attention be given to preserve that humour entire for this operation. I found the weight of a very fresh crystalline of an ox to be 80 grains; and its specific gravity was, as I before stated, 10765. I then pared away all the external part, in every direction, till there remained but 6 grains of the centre; and the specific gravity of these 6 grains I found to be 11940. From this it would seem that the density increases gradually from the circumference to the centre.

It is not surprising that the crystalline humour should be subject to disorders, it being wholly composed of animal matter

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matter of the most perishable kind. Fourcroy says that it is sometimes found osseous in advanced age. Albumen is coagulated by many methods; and, if we suppose that the same changes can take place in the living eye as in the dead animal matter of the chemists, it will be easy to account for the formation of the cataract; a disorder which cannot be cured but by the removal of the opake lens. If a sufficient number of observations were made respecting the frequency of the cataract in gouty habits, some important conclusions might be drawn as to the influence of phosphoric acid in causing the disorder, by the common effect of acids in coagulating albumen.

Analysis of Ambergris. *By* Bouillon Lagrange.

It is now almost generally admitted that ambergris is found in the stomach of the cachelot, called by naturalists *Physeter macrocephalus*, and that it seems to be the product of its digestion.

Dr. Swediaur has proved in his Researches on the Nature and Origin of Ambergris, that the beaks of the sepia, with which large pieces of ambergris, both those found on the coasts or at the surface of the sea, and those taken from the bellies of these whales, are mixed, belong to that species to which Linnæus has given the name of *Sepia octopoda*. The existence of these beaks and of other foreign bodies in ambergris is a convincing proof that it has been once in a state of softness or liquidity. M. Swediaur says, that the kind of whale which contains ambergris in its belly is that species from which spermaceti is extracted, which seems to be the *Physeter macrocephalus* of Linnæus, and which feeds chiefly on the large species of sepia. It is in the intestinal canal of this whale that the ambergris is found; to the animal it is a source of disease; this matter, when it issues from the bag which contains it, gradually acquires that solidity which it is observed to possess.

Ambergris is found in the Indian seas, near the Moluccas, the Maldives, and Madagascar, and on the coasts of China and Japan, and from Iola to the Manillas. It is often picked up on the Coasts of Maragnon, or of Brasil, but more commonly on those of Africa towards Cape Blanc, the Gulf of Arguin, the Bay of Portendia, and in some

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other islands which extend from that of Mosambique to the Red Sea.

According to the accounts of several travellers, the inhabitants of the isles of Sanballat search for it in a very singular manner. After storms they proceed along the shore, and if there be ambergris on it they perceive it by the smell. There are certain birds and other animals on these shores which are fond of ambergris; and as they discover it at a distance by the smell, they go in search of it in order to eat it.

There can be no doubt that ambergris is an animal production. Several substances approach very near to it in smell, such as the excrements of some of the mammalia, and particularly those of oxen and pigs. I found that cows' dung dried in the sun has an odour very analogous to ambergris, and even to musk; and hence the name of *indigenous musk* given in some countries to this substance, prepared in this manner.

Ambergris *(ambrea grisea)* is a light substance which floats on the water, solid, opake, of an ash colour, veined with white and yellowish-brown, slightly odoriferous, but the odour of which develops itself as it grows old, or when it is mixed with musk or other aromatous substances, as it is prepared for perfumes or smelling waters.

Good ambergris in its natural state may be known if when scraped with the blade of a knife it adheres to the knife like wax, if it retains the impression of the nails and that of the teeth, and if, when pricked with a hot needle, it emits a fat odoriferous juice. Though solid, and in general brittle, it is not sufficiently hard to bear polishing, but rubbed with the nail it becomes smooth like hard soap.

Geoffroy, Neumann, Grim, and Brow, have classed ambergris among the bitumens. The analysis made of it by chemists is not sufficient to determine the nature of this substance. Ambergris fuses in the fire, says Geoffroy, into a resin of a yellow or gold colour; when applied to a flame it kindles and burns; spirit of wine does not dissolve it entirely, there remains a black matter like pitch on which it has no action. When dissolved it leaves some time after a white nebulous sediment, which gradually coagulates and becomes thicker and thicker; this *coagulum* being dried changes into a brilliant foliated earth, and which is not different from spermaceti.

In distillation, according to the same chemist, ambergris gives first an insipid phlegm, then an acid liquor or spirit, and a highly odorous yellow oil, with some portion of acid and

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and volatile dirty salt; in the last place there remains at the bottom of the retort a brilliant, black, and bituminous matter. It is here seen that this analysis, which does not differ from that given by all chemists, deserves to be re-examined, in order to give us correct ideas respecting the nature of this singular substance.

I think it my duty to acquaint those who may be desirous of repeating these experiments, to be very careful in their choice of the ambergris. Several varieties are common in commerce, the price of which establishes different species. There is no doubt that this substance is fabricated as *castorium* is made in some countries of Germany. Bayen assured me that he saw it made at Franckfort. This father of chemistry found that his memory did not deceive him; and, what is rare among travellers, he told the truth.

I have examined several kinds of ambergris used in commerce. Some of them vary in specific gravity, have a colour more or less dark, with very little odour, and are flexible; others are of an ash-grey colour, pretty hard; in the last place, others are almost stony, are scarcely soluble in alcohol, and have no odour.

The ambergris which I analysed was not purchased. I compared it with that in the cabinet of the Museum of Natural History, and found no difference either in the colour or odour.

Physical Properties.

It is of an ash-grey colour, interspersed in the inside with some yellow striæ; has a sweet mild odour, and grows soft between the fingers. When reduced to a fine powder it acquires a darker colour; pounded in a glass mortar it becomes agglutinated and adheres to the pestle.

Its taste is dull and almost insipid, and when put between the teeth it exhibits the same phenomena as wax.

Its specific gravity is from 844 to 849: that of water being 1000.

According to Brisson the specific gravity of ambergris is 9263. The weight of the cubic inch 4 gros 58 grains; that of the cubic foot 64 pounds 13 ounces 3 gros 47 grains.

The specific gravity of blackish ambergris is 7803. The weight of the cubic inch 4 gross 3 grains; that of the cubic foot 54 pounds 9 ounces 7 gross 35 grains.

Chemical Properties.

Exp. 1. Ambergris, when placed on burning charcoal, burns, and becomes entirely volatilized; it then leaves an agreeable odour.

If

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If this combustion is effected more slowly in a platina crucible it fuses, emitting the same odour; that of a fat body is also distinguished.

Nothing remains in the crucible but a black greasy spot.

Fifty degrees of heat (Reaumur's thermometer) are sufficient to fuse it. A brown brilliant liquid is thus obtained.

At eighty degrees it is volatilized under the form of white vapours.

Exp. 2. The odour developed during its volatilization, having made me suspect the presence of an acid analogous to that of balsams, an experiment was made to ascertain it.

A bit of ambergris was placed in a porcelain capsule covered by a bell, in which was suspended a paper tinged with turnsole. The apparatus being placed on a sand bath, the temperature was raised to the degree necessary to volatilize the ambergris: the paper speedily assumed a red colour. Nothing was now necessary but to discover the nature of this acid; and with this view Scheele's process for extracting acid of benjamin was employed.

The product was examined, and left no doubt in regrad to its analogy.

Exp. 3. The analysis with the retort added nothing to the knowledge already acquired in regard to the nature of ambergris.

A gentle temperature makes it fuse; in a more elevated one it is decomposed, and a whitish acid liquor and a light oil soluble in part in alcohol, which gives it a yellow colour, pass over into the receiver. There remains in the retort a light and very voluminous charcoal.

Exp. 4. Ambergris floats on water, and does not suffer itself to be penetrated by that liquid cold; it acquires neither odour nor savour. Boiling water produces no alteration on it. At that degree the ambergris dissolves and appears under the form of a brownish oily liquid; a small quantity of a black matter insoluble in alcohol is separated. The filtered liquor had neither odour, nor colour, and only a slight bitter savour.

It is only in the ratio of the temperature, then, that ambergris dissolves, since in proportion as it is lowered it is found to have the same properties.

Exp. 5. Acids in general have very little action on ambergris. It has not yet been possible by the aid of these agents to discover the constituent parts of this compound.

Weakened sulphuric acid makes it experience no change. If concentrated, it lays bare little of the oxyd of carbon.

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The same phænomena are exhibited by the muriatic and oxygenated muriatic acids.

Nitric acid raised to 18 degrees, and distilled from off that substance, in a pneumonic apparatus, gives for result nitrous gas, carbonic acid, and azotic gas.

The latter arises, no doubt, from the decomposition of some animal matters accidentally mixed with the ambergris, as may be observed in the examination of some fragments of it.

There is found in the retort, after the elastic fluids are extracted, a thick liquid inclining to yellow: when brought to a soft consistence the matter swells up a little, and when evaporated to dryness in a porcelain capsule there remained a dry brittle matter of a golden-yellow colour, brilliant and transparent, which exhibited characters analagous to resins.

Exp. 6. Alkalies unite with ambergris, and form with it soluble soaps.

Thirty grains of ambergris with ten grains of pure potash were put into a platina crucible and exposed to a gentle heat; the mixture fused without manifesting the presence of ammonia: by cooling, a brownish homogeneous mass was obtained.

One ounce of distilled water being poured over, it dissolved a part. This liquor was exceedingly alkaline.

The other portion not soluble remained under a soft tenacious form, which when warm adhered to the fingers.

A larger quantity of water being added, the whole was dissolved.

Caustic potash triturated some time in a mortar with ambergris does not facilitate its solution by water.

Ammonia cold has no action on it, but with the help of heat dissolves it. The mixture gradually becomes brown, and by evaporation gives a glutinous saponaceous matter, similar in every thing to that obtained by potash.

Exp. 7. Fixed oils, such as that of colsa, olives, &c. dissolve it with the help of heat in a very little time: the solution is yellow and transparent, and by evaporation becomes brown.

Exp. 8. Volatile oils also dissolve ambergris. Those of turpentine, savin, and hysop, do the same. With the help of heat the solution takes place speedily.

Evaporation gives a thick red magma which cannot be entirely dried, which burns on coals, emitting a thick smoke and an odour approaching that of ambergris. Alcohol dissolved this substance, and acquired a golden

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yellow colour: it was precipitated from it by the help of heat.

A complete solution cannot be obtained in volatile oils which are too old, even with the assistance of long continued heat.

Exp. 9. Solution by ether is very speedy, even without heat.

Exp. 10. The solution of ambergris by alcohol is that alone which can conduct to any certain results. The constituent parts may be separated in such a manner, that by uniting them a compound will be obtained, the characters of which approach near to those of the compound.

One gros of ambergris being reduced to fine powder and put into a phial, two ounces of rectified alcohol were poured over it. Twenty-four hours' maceration were sufficient to give to the alcohol a dark yellow colour. When the liquor had been filtered a new quantity of alcohol was added to the undissolved part, and the solution was facilitated by elevating the temperature. When the whole was dissolved, except a small quantity of black matter, the liquor was filtered still warm. It passed through clear; but by cooling there was separated a light pale yellow substance, a part of which remained attached to the sides of the vessel.

The first alcoholic tincture made cold, and that arising from the matter precipitated, were mixed, and evaporated to the consistence of extract: it was of a reddish yellow colour, adhered to the fingers, had an agreeable odour and a sweet taste. The evaporation was continued to dryness: in this state the matter with a brilliant and transparent aspect became soft between the fingers, and burnt in the same manner as resins.

The experiment was repeated, to establish in a more positive manner the characters of these two substances.

For this purpose the ambergris was left, as before, to macerate in alcohol for twenty-four hours: it was then filtered, and a new quantity of alcohol was added to the residuum: the maceration was the same. This second liquor was less coloured than the former. A third dose of alcohol was poured over the undissolved part, but it was scarcely coloured. This little action of the alcohol on the residuum gave reason to believe that it was no longer soluble in that menstruum: but I soon was convinced of the contrary. I heated the mixture, and the whole matter was dissolved in a moment. Nothing remained but about four grains of a black powder, which was oxyd of carbon. The liquor was filtered warm, and by cooling there was precipitated

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pitated a whitish yellow glutinous matter, which was separated from the liquor.

This experiment proves the possibility of separating by the help of alcohol three very distinct products: the first soluble cold, the second soluble warm, and the third insoluble, which is separated in the form of dust.

To establish the characters of the two first substances, the alcoholic tincture made cold was evaporated to dryness. There remained in the capsule 22 grains of a brown dry matter, brilliant in the fracture, unalterable in the air, and which became soft in a gentle heat: fifteen degrees were sufficient to give it a tenacious and glutinous consistence: when placed on coals it was entirely volatilized. If this experiment be made in a silver spoon, the volatilization is effected with the same rapidity: it emits an aromatic odour, and leaves no carbonaceous residuum.

As I suspected that this substance might have some analogy with resin extracted from the *propolis* by C. Vauquelin, I made some comparative experiments with it. The following are the points in which they differ:

1st. It fuses much more slowly.

2d. It emits a thick odorous smoke, which in smell approaches near to that of honey.

3d. It swells up, and leaves a very voluminous charcoal.

In the last place, this first substance extracted from ambergris, which may be considered as a real resin, is soluble in alcohol, and may be precipitated by water. This tincture reddens turnsole paper; which still proves that the alcohol dissolves at the same time the benzoic acid previously found, either by burning the amber under a bell, or in treating it with lime.

Nothing now remains but to examine the product obtained by alcohol warm, after the resin has been extracted by maceration.

I have already said that there is separated from the alcohol by cooling, a substance which deposits itself in part, and which adheres to the sides of the vessel.

When separated from the liquor and properly dried, it remains light and somewhat voluminous; it breaks and moulders under the pressure of the finger, but soon after it extends itself and becomes soft by the heat: it has a lamellated texture if left to cool slowly.

It retains between its molecule a little water and alcohol, which are separated by keeping this substance some time in a state of fusion. When re-fused it is much less whi e than before, and no longer possesses the granulated texture it exhibited,

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exhibited. In a word, I have found in it all the properties of *adipo-cira*; a substance which C. Fourcroy found in the fat matter of dead bodies, and of which he described the characters in a memoir printed in the eighth volume of the *Annales de Chimie.*

Recapitulation.

It appears, then, that we may conclude from these experiments:

1st. That ambergris is a compound substance which burns and is entirely volatilized.

2d. That when distilled alone there is obtained from it a liquor slightly acid, and an oil partly soluble in alcohol and of an empyreumatic odour.

3d. That by sublimation, or the process of Scheele, benzoic acid is extracted from it.

4th. That water has no action on the substance.

5th. That by help of the nitric acid a matter analogous to resins mixed with *adipo-cira* is separated from it.

6th. That concentrated sulphuric, muriatic, and oxygenated muriatic acid char it without dissolving it.

7th. That with alkalies it forms a saponaceous compound.

8th. That fixed and volatile oils, ether, and alcohol, are the true solvents of ambergris.

9th. That alcohol affords the means of separating its constituent parts in the following proportions:

	Grammes.
Adipo-cira - - - - - - -	2.016
Resin - - - - - - - -	1.167
Benzoic acid - - - - - -	0.425
Carbonaceous matter - - -	0.212
	3.820

Chemical Analysis *of the* Urine *in a* Case of Diabetes Mellitus, *by Professor* Klaproth, *of Berlin.*

I Had lately an opportunity of examining the urine of a patient, labouring under diabetes mellitus, which was transmitted to me by Dr. Michaelis, of Harburg. The colour of this liquor was pale yellow; and a small portion of a reddish sediment, had fallen to the bottom of the glass in which it

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it was contained. The smell was neither putrid nor ammoniacal, but the taste, as well its changing the blue vegetable colour to a red, evidently betrayed the traces of its containing an acid, which I thought had been generated by the saccharine matter passing into acetous acid; an alteration which it was likely to have undergone, as it had been kept above six months in a warm place. Besides this acid, I discovered in the liquor evident traces of phosphoric acid, for on being mixed with acetite of lead it precipitated a white substance, part of which could be reduced to lead, while another part was melted to a white porcelain globule, which on cooling received a polyedrical form, being thus characterised as phosphate of lead. The reddish sediment was accurately examined for the purpose of finding in it the acidum urolithicum, of which, however, not the least trace could be perceived, it being found chiefly to consist of albuminous matter.

With a small quantity of the above urine, &c. Dr. M. had sent me a portion of the residuum of the same diabetical urine, after its having been evaporated to the consistency of honey. It had the appearance, the blackish colour, and consistency of a thin extract, and contained a sediment of small brown and spherical crystals; it had a sourish taste; no ammonia could be disengaged by mixing it with caustic kali, and it remained without any smell. On adding to it carbonated kali, a considerable effervescence took place. Being infused with four times its measure of alcohol, and digested with a very moderate heat, the greatest part of it was dissolved except a gummous residuum and the above mentioned salt. After this solution had been separated from the residuum through the filtrum, and evaporated to the consistency of an extract, it was mixed with three times its measure of moderately strong nitric acid, whereby a strong reaction ensued in the heat, a considerable quantity of nitrous gas being at the same time disengaged. The residuum appeared of the colour and consistency of pure honey, which being again treated with the same quantity of nitric acid, was for the most part changed into oxalic acid, shooting into crystals on cooling. The saline and gummous residuum, which remained insoluble in alcohol, was dissolved in hot water, which being cooled, deposited the salt in form of light brown crystals, which seemed to be flat tetraedical prisms. As I had discovered in the urine the presence of phosphoric acid, I concluded those crystals might also contain it, in which however I was disappointed. They easily melted on a coal

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a coal before the tubus fusorius, but formed no pearl, leaving behind a fixed alkaline salt, which being strongly heated in a platina crucible, dissolved in water, and supersaturated with a solution of tartaric acid, yielded pure tartar. They made a strong precipitation in lime water, but the sediment being heated proved to be only caustic lime, which was soluble in water. In a solution of acetite of lead they precipitated a white substance, which was entirely reduced to lead.

From these and similar experiments these crystals appeared to consist of nothing but oxalat of kali. Alcohol precipitated the gummous particles from the watery solution in form of a light brown glutinous substance. The inspissated urine resembled more a vegetable extract than an animal substance; but particularly, the specific constituent of the urine, the ureum, was not contained in it. The results of these experiments agree with those which Dr. Rollo, Mr. Cruikshank, and lately Messrs. Nicolas and Gneudeville have communicated, except that these gentlemen having examined fresh urine, found the chief constituent of it to consist of mucosaccharine matter, which in the urine I examined had been changed into an acid extractive matter. It is remarkable, that no phosphoric acid could be traced in the inspissated urine, which I had found in the raw urine. The above extract of urine, mixed with acetite of lead, yielded a great quantity of an ash coloured sediment, which was easily reduced to metallic lead.

Observations on several Pharmaceutical Preparations, by CIT. STEINACHER, *Druggist, at Paris.*

Unguentum Nutritum.

CITIZEN Dubree, an eminent druggist at Rouen, has lately presented a formula for unguentum nutritum, to the Pharmaceutical Society. As apothecaries, zealous for the perfection of their art, have proposed improvements in the preparation of this ointment at different periods, I have thought that an object, to which the attention of practitioners has been called from time to time, notwithstanding it is apparently obsolete, deserved a fresh examination.

When oil, vinegar, and litharge are to be mixed together into a homogeneous mass, a little litharge must be dissolved in acetous acid, and a sufficient quantity of car-

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bonic acid must be introduced. 1st. to convert the greater part of the litharge into white carbonate, which remains diffused through the oil; 2dly, to thicken the oleous mixture, an effect analogous to the thickening of soups by the carbonic acid, with which we were made acquainted by Pelletier. If a sufficient quantity of vinegar to form a saturated saline compound be employed, the mixture will never combine perfectly. This theory, founded on experiment, brings us back to the prescribed formula, as the best that can be adopted, that which produces an ointment, the most bulky, the lightest, and the most cooling to the part affected. It succeeds very well, when the operator is endued with patience, and works in a cold place. It may be abridged however, if, according to the excellent advice of Baumé, we employ coagulated oil of olives, by which the surfaces of contact are increased, and the introduction of the air is facilitated. One important fact with respect to keeping the preparation is, that at the temperature of 15° or 16°, at which most kinds of fermentation take place, a portion of the carbonic acid is extricated, and leaves exposed an oxyd at $_{18}\overset{8}{8}$, which becomes again yellow. It requires a temperature of 10° to preserve its white colour unaltered.

Citizen Dubree, and Citizen Granet before him, proposed to expedite the preparation by adding hog's lard; but I find, that this addition diminishes its bulk and levity. In Germany, different compositions are made under the name of *nutritum*, as with vinegar of litharge and half its weight of oil of roses, which produce an ointment as white as wax, and of the consistence of a liniment; with vinegar of litharge two parts, and olive oil three parts, which yield a whitish ointment of a moderate consistence; with two parts of olive oil, one part of wax, and two parts of vinegar of litharge, which furnish an ointment of a firm consistence, and a waxy whiteness. But all these compositions are simple mixtures, feebly united, by no means resembling the nutritum of the French shops, and not requiring for their formation a mutual reaction between the different particles of the ingredients.

Crystallization of Phosphoric Acid.

It is known, that the affinity of phosphoric acid for water overpowers its force of crystallization; in fact, this salifiant substance appears commonly in the form of a thick oil. I have lately observed, however, that time, the

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grand producer of regular crystallization, effects a symmetrical combination between its particles.

I had prepared half a kilogramme of phosphoric acid, according to the method of Lavoisier, with phosphorus and nitric acid, both of them extremely pure. This acid, freed from nitrous gas, reduced to the consistence of a thick syrup, and introduced into a phial with a glass stopper, had been used at different times in the course of a year, without exhibiting any peculiar appearance. The year following I let it remain perfectly at rest in the phial, which was half full, and closely stopped. After this period I found the surface of the fluid covered with a saline crust, from which shot downward prismatic crystals in shining laminæ, an inch long, and a line broad, diverging from a centre. I will not describe their geometrical structure, for they are extremely thin, and embedded in a fluid too viscous for me to take them out without breaking. Besides, they are still increasing; laminæ rise from the bottom of the vessel, which touch the surface of the glass, and seem preparing to intermix with the ramifications that shoot down from the upper stratum. The sides of the vessel are the seat of this beautiful crystallization. The centre remains in part concrete, or fluid, whence it follows, that if a very regular dissipation of the particles of the liquid acid of phosphorus be occasioned by repose, the sides of the vessel contribute to it in great measure by affording fixed points, to which the positions of affinity most favourable to crystallization direct themselves.

Purity of Phosphorus.

Proust has informed the public, that, in the distillation of phosphorus, a combination of this substance with the charcoal constantly took place. This important discovery extends much farther than its celebrated author has shewn.

Take the most brilliant and most transparent phosphorus, which has not only been strained through chamois leather, according to Woulfe's method, but has also been dissolved several times in nitro-muriatic acid, as done by Count Mussin-Puschkin, or which has been treated with oxygenated muriatic acid, after the mode of Juch of Wurkburg; let it be heated gently in a long slender tube; red parts will separate from it. Put a few grains of this phosphorus, which is conceived to be so pure, on a silver spoon, and set fire to it; a red trace will remain. If the spoon be heated in

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in the dark, the red trace will be seen still to burn, and a coal will remain impregnated with phosphoric acid.

Mr. Juch has asserted, that his phosphorus is extremely pure, because it no longer becomes black when heated with caustic alkali; but it is in fact because the phosphure of carbon is unalterable by caustic potash. According to the indisputable authority of Proust, this re-agent is incapable of proving the purity of phosphorus. I confess, that heated oxygenated muriatic acid destroys part of the carbon of phosphorus, because the combustible power of its oxygen increases in the ratio of its elasticity; but it produces this effect only by burning a proportionate quantity of phosphorus. On the contrary, when it is cold, and its oxygen is reduced to its natural degree of elasticity, it is far from destroying the carbon; it separates it in the state of black oxyd, and converts the phosphorus into white oxyd, while at the same time, itself returns to the state of simple muriatic acid. I have observed this fact on a stick of transparent phosphorus, which I kept two years in a bottle filled with pure oxygenated muriatic acid, saturated at the temperature of 10°. It is impossible, therefore, to free the phosphorus entirely of charcoal. They oxyde, or are acidified nearly in proportional quantities; and though the proportion of charcoal may be diminished, the phosphorus always retains some by its power as a whole. In fine, I am obliged to contradict the assertion of an illustrious master, Citizen Fourcroy, "that we are unacquainted with any direct combination between carbon and phosphorus, though it probably exists," and to consider that product on which chemists have hitherto bestowed the name of pure phosphorus, as a kind of gangue, from which the radical phosphorus is disengaged to enter into a number of combinations, without our being capable of obtaining it in its primitive form.

White Oxyd of Phosphorus.

When phosphorus is heated in a very long and very slender glass tube, in a sand-heat of 100° of the decimal thermometer, it is covered with a mild light, and exhales a white vapour, which condenses in the upper part of the tube, while, at the same time, part of the phosphorus, with excess of carbon, separates with its red colour. This white vapour, which has acquired for its formation a slight combustion, is a white oxyd of phosphorus at a minimum. The following are some of its properties. It is flocculent, possessed of cohesion, and occupies four times the space of the phosphorus employed in the experiment. When it

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is dry, it does not redden litmus paper. It contains caloric and inflames on the contact of combustible substances. It powerfully attracts the moisture of the air, and is rapidly converted into phosphorus acid. It differs greatly from the white oxyd of phosphorus made by the long action of water, or cold oxygenated muriatic acid. This appears friable and pulverulent. It has lost almost all its latent heat. It is very little inflamable, and does not attract the moisture of the air. It is acidifiable only by the intimate action of an oxygen that contains calōric highly condensed, as that of the nitric acid. In a word, it is phosphorus at a maximum of oxydation.

Regular Crystallization of Essential Oil of Roses.

Citizen Steinacher has lately observed this with attention. He mixed eight kilogrammes of the magna of damask roses (*roses pâles*) with some parts of water, according to the process of Cit. Demachy; and after a day's maceration he drew off by distillation sixteen kilogrammes of water. This was immediately poured into a large glass jar, which was covered with a cloth, and left at rest. In twenty-four hours he found the surface of the water covered with an irridescent pellicle, interspersed with hexaedrons, very much resembling the crystals of snow, which the illustrious Cit. Mongé has described. He informs us, that a slight shake is sufficient to tear the crystalline gauze, and reduce it to that irregular form of whitish scales or laminæ, which the oil of roses commonly assumes.

Account of Diseases in an Eastern District of London, from December 20, 1803, to January 20, 1804.

ACUTE DISEASES.		Amenorrhœa	14
Peripneumonia Notha	4	Leucorrhœa	11
Dysenteria	2	Menorrhagia	6
Variolæ	2	Hysteria	3
Rheumatismus Acutus	3	Epilepsia	1
CHRONIC DISEASES.		Cephalalgia	9
Tussis	14	Vertigo	4
Tussis cum Dyspnœa	12	Rheumatismus Chronicus	17
Catarrhus	4	PUERPERAL DISEASES.	
Phthisis Pulmonalis	3	Menorrhagia Lochialis	8
Hydrothorax	2	Dolores post Partum	7
Anasarca	4	Mastodynia	5
Ascites	2	Ephemera	10
Icterus	1	INFANTILE	

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INFANTILE DISEASES.		Vermes	5
Convulsio	3	Herpes	7
Ophthalmia	2	Dentitio	4

Since the last Report nothing has occurred particularly worthy of communication.

To the above list we may subjoin a general remark on the state of disease during the last year. In the earlier months of it, scarlatina made its appearance; it assumed however a mild form, and in very few instances proved fatal. In the spring, the influenza prevailed in so general a manner, and extended itself over so wide a circle as to occupy the principal attention of practitioners, not only in the metropolis, but in every part of the kingdom, and indeed in various foreign parts. So particular have been the reports communicated in this Journal, as well as in many distinct publications, that it is quite unnecessary to enter into detail of its symptoms or cure. After this disease had disappeared, an unusual degree of health was enjoyed for some months; the number of complaints was small, and their symptoms were uncommonly mild. The autumn also passed over without any remarkable interruption to the health of the public: the instances of cholera and dysentery, which in general are frequent at this season of the year, were very few. Since the winter commenced the temperature of the air has for the most part been so mild, that coughs, catarrhs, and the various pneumonic diseases that usually prevail at this season have been remarkably few.

CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

Medical Ethics; or a Code of Institutes and Precepts, adapted to the Professional Conduct of Physicians and Surgeons; to which is added an Appendix, containing a Discourse on Hospital Duties; also Notes and Illustrations. By THOMAS PERCIVAL, M.D. Manchester, 1803.

Much of this interesting work has already appeared before the Public in one form or other; but we have great pleasure in seeing the whole collected together, as forming a code of most excellent

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regulations for professional men, every clause of which exhibits that liberal and gentleman-like spirit which is always expected from, and so often adorns, the well educated British Physician.

The first chapter, the author observes in his preface, was composed in 1792, at the request of the physicians and surgeons of the Manchester Infirmary, and is the substance of the laws by which the practice of that institution (as far as relates to the mutual conduct of the medical attendants) has since been regulated.

The second chapter includes the more extended subject of professional conduct in private or general practice. Earnestly recommending a perusal of the whole, we shall select a few parts which are more peculiarly professional, or such as are intended to regulate conduct in cases to which the common laws of morality or good manners do not so immediately apply; for, after all, it is only these that are calculated to excite much interest from the medical reader. First, as to interference:

"*Officious Interference*, in a case under the charge of another, should be carefully avoided. No meddling inquiries should be made concerning the patient; no unnecessary hints given, relative to the nature or treatment of his disorder; nor any selfish conduct pursued, that may directly or indirectly tend to diminish the trust reposed in the physician or surgeon employed. Yet though the character of a professional busy-body, whether from thoughtlessness or craft, is highly reprehensible, there are occasions which not only justify but require a spirited interposition. When artful ignorance grossly imposes on credulity; when neglect puts to hazard an important life; or rashness threatens it with still more imminent danger; a medical neighbour, friend, or relative, apprized of such facts, will justly regard his interference as a duty. But he ought to be careful that the information, on which he acts, is well founded; that his motives are pure and honourable; and that his judgement of the measures pursued is built on experience and practical knowledge, not on speculative or theoretical differences of opinion. The particular circumstances of the case will suggest the most proper mode of conduct. In general, however, a personal and confidential application to the gentleman of the faculty concerned, should be the first step taken, and afterwards, if necessary, the transaction may be communicated to the patient or to his family."

Professional Assistance. — "Whenever a physician or surgeon *officiates* for another, who is sick or absent, during any considerable length of time, he should receive the fees accruing from such additional practice. But if this fraternal act be of short duration, it should be gratuitiously performed; with an observance always of the utmost delicacy towards the interest and character of the professional gentleman, previously connected with the family."

Fees.—"Some general rule should be adopted by the faculty, in every town, relative to the *pecuniary acknowledgements* of their patients; and it should be deemed a point of honour to adhere to this rule

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rule with as much steadiness, as varying circumstances will admit. For it is obvious that an average fee, as suited to the general rank of patients, must be an inadequate gratuity from the rich, who often require attendance not absolutely necessary; and yet too large to be expected from that class of citizens, who would feel a reluctance in calling for assistance, without making some decent and satisfactory retribution."

Quack Medicines.—"The use of these should be discouraged by the faculty, as disgraceful to the profession, injurious to health, and often destructive even of life. Patients, however, under lingering disorders, are sometimes obstinately bent on having recourse to such as they see advertised, or hear recommended, with a boldness and confidence, which no intelligent physician dares to adopt with respect to the means that he prescribes. In these cases, some indulgence seems to be required to a credulity that is insurmountable. And the patient should neither incur the displeasure of the physician, nor be entirely deserted by him. He may be apprized of the fallacy of his expectations, whilst assured, at the same time, that diligent attention should be paid to the process of the experiment he is so unadvisedly making on himself, and the consequent mischiefs, if any, obviated as timely as possible. Certain active preparations, the nature, composition, and effects of which are well known, ought not to be proscribed as quack medicines."

The last is a subject of some difficulty, as the author himself appears to feel by the concluding sentence, which evades the general question, but does not decide it.

Gratuitous Advice.—"A wealthy physician should not give advice *gratis* to the affluent; because it is an injury to his professional brethren. The office of physician can never be supported but as a lucrative one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with, which might justly be claimed." This is equally just and prudent.

Was it the author's knowledge of mankind that suggested to him the following clause?

"The commencement of that period of senescence, when it becomes incumbent on a physician to decline the offices of his profession, it is not easy to ascertain; and the decision on so nice a point must be left to the moral discretion of the individual. For, one grown old in the useful and honourable exercise of the healing art, may continue to enjoy, and justly to enjoy, the unabated confidence of the public. And whilst exempt, in a considerable degree, from the privations and infirmities of age, he is under indispensable obligations to apply his knowledge and experience in the most efficient way, to the benefit of mankind. For the possession of powers is a clear indication of the will of our Creator, concerning their practical direction. But in the ordinary course of nature, the bodily and mental vigour must be expected to decay progressively, though perhaps slowly, after the meridian of life is past. As age advances, therefore, a physician should, from time to time,

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scrutinize impartially the state of his faculties; that he may determine, *bona fide*, the precise degree in which he is qualified to execute the active and multifarious offices of his profession. And whenever he becomes conscious that his memory presents to him, with faintness, those analogies, on which medical reasoning and the treatment of diseases are founded; that diffidence of the measures to be pursued perplexes his judgement; that from a deficiency in the acuteness of his senses, he finds himself less able to distinguish signs, or to prognosticate events; he should at once resolve, though others perceive not the changes which have taken place, to sacrifice every consideration of fame or fortune, and to retire from the engagements of business."

The conduct of physicians to apothecaries forms the subject of the third chapter, at the end of which he strongly recommends the establishment of benefit societies similar to those already established in Norfolk and London, for the most numerous class of professional men.

The fourth chapter relates to those cases in which medical men, as such, are concerned with the laws of their country, and with this terminates the juridical part of this collection.

Two additions are made, in the form of appendix; the first, a Discourse on Hospital Duties by the Rev. Thomas Bassnett Percival; and the second, consisting of Notes and Illustrations to the former part of the work, by the author. The most prominent of these, and one in which the author appears to speak with his whole heart, is a defence of the medical profession from the old and often repeated charge of scepticism in matters of religion.

Here we shall conclude our remarks on this candid and interesting treatise, abounding in humanity and good sense; but as a code for practical use, much too limited and general to apply to almost the only cases in which specific advice might be acceptable.

Essays on the Diseases of Children, Essay II. on the Bowel Complaints more intimately connected with the Biliary Secretion, and particularly of the Atrophia Ablactatorum, or Weaning Brash. By JOHN CHEYNE, M. D.

The first Essay of this author, on Croup, we noticed in a former number of our Journal; in the present treatise Dr. C. describes some very important diseases connected with the biliary system, to which infants are liable; and which annually carry off a very large number of the young of the human species.

The first which the author mentions is Jaundice, which attacks infants a few days after birth, attended with languor, flatulence, and bilious urine, and appears at once with such decided symptoms as to indicate a probable organic derangement in the structure of the liver. It is always dangerous, and generally fatal. The author has not found any considerable light thrown on the immediate cause of the disease by dissection, and therefore supposes it with some

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some probability to depend on some preternatural thickening of the pori biliari. A slighter kind of jaundice is however described by several authors, which disappears in a few days.

A plate is given, exhibiting a dissection of a case of the former species of jaundice, in which the principal morbid appearance was a great enlargement of the liver to nearly twice its natural size.

But the most important disease considered in this Essay is what is commonly (in Scotland) called the *Weaning Brash*, and to which Dr. C. gives the appropriate term of *Atrophia Ablactatorum*. It is a morbid state of all the digestive functions of children, apparently produced by a want of the natural food, the mother's milk, and is well known to every practitioner, particularly in large towns, and to every nurse. How many hundreds of instances annually occur in this metropolis, of infants, apparently stout and healthy at birth, who continue to thrive perfectly well for several weeks, till the mother, confiding in the signs of robust health in her plump ruddy infant, is induced to sacrifice to the child of an opulent parent the natural food destined for her own offspring, which is then sent out to some hired nurse in some of the villages in the outskirts of the town, where good air, wholesome food, careful tending, and motherly attention are always promised, and sometimes faithfully bestowed. The event of this change is seen in the almost uniform history of the children of wet nurses, when banished from their mother's breast and their mother's care. The particular symptoms we shall presently give in the author's words, who has described them with accuracy and clearness. Neither is this evil confined to the children of wet-nurses, it is seen more or less in the young offspring of the lowest poor in this metropolis; and wherever the habitual intemperance and violent passions of the mother convert the naturally salubrious food for the infant into a noxious aliment; it is found in a greater or less degree, in a large proportion of the cases where infants are reared artificially from an early age, whatever care and attention are bestowed; and it is met with in infants even at the natural time of weaning, if from ignorance or inattention the great change of diet be not made with sufficient precaution to all the digestive functions.

We shall now give the author's description of the disease.

"The disease which I am now to consider, and which is the chief object of the present paper, is somewhat allied to the last in its nature, and is vulgarly denominated in this part of Scotland THE WEANING BRASH. It is one of the most fatal of the diseases of children, and, as far as I know, it is overlooked by those physicians who have made these diseases their study.

"It is an atrophy, the consequence of weaning children too suddenly at an unfavourable season of the year.

"This disease sometimes comes on two or three days after weaning; frequently not for three or four weeks; sometimes not before five or six weeks have elapsed.

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"The first symptom is a purging, with griping pain, in which the dejections are usually of a green colour. When this purging is neglected, and, after continuing for some time, there is added a retching, with or without vomiting; when accompanied by vomiting, the matter brought up is frequently coloured with bile.

"These increased and painful actions of the alimentary canal, produce a loathing of every kind of food, and naturally are attended with emaciation and softness of the flesh, with restlessness, thirst, and fever.

"After some weeks I have often observed a hectic blush on the cheek; but the most characteristic symptom of this disease is a constant peevishness, the effect of unceasing griping pain, expressed by the whine of the child, but especially by the settled discontent of his features; and this expression of discontent is strengthened towards the conclusion of the disease, when the countenance has shared in the emaciation of the body.

"In the progress of the disease, the evacuations from the belly show very different actions of the intestines, and great changes in the biliary secretion; for they are sometimes of a natural colour, at other times slimy and ash coloured, and sometimes lienteric.

"Towards the end of the disease, the extremities swell, and the child becomes exceedingly drowsy; but these I rather conceive to arise from debility than to be pathognomic symptoms. It is remarkable, in the advanced stages of the disease, that the purging sometimes ceases for a day or two, but without any amelioration of the bad symptoms; nay, I think that children decay even faster than when the purging is most violent.

"The disease seldom proves fatal before the sixth or seventh week; and in this short time I have seen the finest children miserably wasted. I have seen, though rarely, a child recovered after the disease had continued three or four months; and again, I have seen the disease cut short by death, in the second, third, or fourth week, before it had reached the acme; the sudden termination having been occasioned by an incessant vomiting and purging, or by convulsions, from the immense irritation in the bowels.

"The disease is more frequent in children who have been weaned before the eighth or ninth month, and in particular, in those who, in consequence of some accident happening to the nurse, have been weaned abruptly.

"I have not been able to determine what temperament is most peculiarly liable to this disease; but, without meaning to insinuate any necessary relation, I think it appears most frequently in those children of a lax fibre, whose constitutions, at a more advanced stage of life, might be supposed liable to the attack of strumous disorders.

"This is a disease of the autumnal months. I seldom, comparatively speaking, have seen it commence before the soltice, nor after the end of the year; and I suspect that it is most general in sultry seasons.

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" As it will be presently shown, this disease gives origin to a great change in the glandular system of the mesentery; and this explains how it should happen, that after it has been removed, either by medicine, or by a proper regimen, and the healthful exertions of a good constitution, it is very apt, after slight errors in diet, or from cold, to return, even after the lapse of months. A person who knows this disease, will often be able to recognise it in the very obstinate and baffling complaints of the bowels, which children have from the beginning of the second to the end of the third year.

" At the time when weaning brash comes on, the teeth are usually appearing; and, from a common notion, that a flux is wholesome during teething, the disease is sometimes allowed to make an irremediable impression on the constitution, before the physician is called.

" My attention was very early directed to this disease, from finding that it had an appropriate name among the vulgar, and yet that it was not known to those physicians whom I consulted respecting its nature. Some of them had observed a purging as a very common consequence of weaning; but they supposed that it arose from teething: Others told me, that it arose from a mesenteric enlargement in scrophulous children: And until I could satisfy myself by dissection, I rested on this latter supposition."

The appearances on dissection are important. " The first dissection which I had an opportunity of making of a child who had died of weaning brash, did not instruct me in the true nature of the disease; for the mesenteric glands were considerably enlarged and inflamed, and I still imagined that their affection might have occasioned the purging and marasmus. But in prosecuting my research, I was convinced, that the disease was an undescribed one; and that although there might, in some instances, be mesenteric obstruction, it was not necessary to the disease; that it was the effect, and not the cause of it.

" I observed, in every instance, that the intestinal canal, from the stomach downward, abounded with singular contractions, and had in its course one or more intus-susceptions; that the liver was exceedingly firm, larger than natural, and of a bright red colour, and that the enlarged gall bladder contained a dark green bile. In some dissections, the mesenteric glands were swelled and inflamed; in others, however, they were scarcely enlarged, and had no appearance of inflammation.

" These contractions and intus-susceptions were entirely of a spasmodic nature, as in the latter the contained part of the gut was easily disengaged from that which formed its sac; and in no part of the entanglement was there adhesion, or even the mark of inflammation: and the contracted portions of the intestine were again permanently dilated, by pushing the finger into them.

" These appearances led me to imagine, that the weaning brash in its confirmed state, is imputable to an increased secretion of acrid

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crid bile, or rather to the morbid state of the liver, which occasions this; of which, however, I am afraid to attempt the explanation. It is proved, that there is an increased quantity of bile in the intestines, by the green dejections which are frequent in the beginning of the disease, and by the bilious vomiting."

As the cutting of teeth is an abundant source of irritation to many children, and of anxiety to all parents for great part of the first two years of the infant's life, it is natural that this should take its share in the supposed cause of the atrophy of weaned children. Nor is it easy (if possible) always to distinguish how far the symptoms of irritation may be produced, or at least aggravated, by the cutting of teeth. We think however that the author very justly lays but little stress on this cause in the present complaint; and it is of importance to determine this point as nearly as may be, since the practice of lancing the gums, we are convinced, is not quite so invariably harmless as is sometimes supposed.

The treatment of this very important disease is difficult, not so much as to what plan *ought to be prescribed*, as to that which *will be followed*.

The first and most obvious remedy would be to procure for the little sufferer the food for which it daily and hourly thirsts, *its* mother's or *a* mother's milk; but the very circumstances which at first deprived it of its natural food, will in most instances continue to operate in preventing its return to this aliment.

The food should be the most easily digestible, and in particular it should be remarked that animal food in the form of broth, jelly, &c. is much preferable to the vegetable, or at least should be largely mixed with it.

As to medicines, the author thus speaks of them: "Before I had formed the opinion of the disease which I now hold, I limited my attempts to the alleviating of the more urgent symptoms, endeavouring sometimes to restrain the purging by opiates, and at others anxious and happy to restore it again. I therefore used opiates in all ways, with aromatics; then the testaceous powders, with occasional doses of rhubarb. I tried laxatives in the beginning of the disease, and I think that they were useful. Then imagining the disease to be dysenteric, I gave ipecacuan, both as an emetic, and in small doses, mixed with prepared chalk, as an antispasmodic, to restrain the irregular action of the bowels, and certainly with some effect. Although I had some success from these remedies in the early stages of the disease, I found invariably, that when the disease had taken a firm root, it frustrated all my exertions.

"In the beginning of the disease, and even at all periods of it, when the attack is slight, I should certainly recommend a dose or two of rhubarb, to the extent of five or six grains, at the interval of two days between each dose; and that, in the mean time, the child should take half or a third part of a grain of ipecacuan powder, mixed with six or eight grains of prepared chalk, and a small portion of some aromatic powder, as cassia, every four or five

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five hours. Should there be much griping along with the purging, a glyster of mucilage of starch, with five or six drops of laudanum in it, administered at bed-time, will be attended with much advantage."

But the author speaks with more confidence of calomel, given as in other idiopathic diseases of the liver for a certain length of time, and more as a mercurial than a purgative. From the manner in which the author announces this remedy, he appears in some degree to consider it a practice as novel as it is beneficial. Of the salutary and often surprizing effects produced by this invaluable preparation in this disease, we have not a moment's doubt; but the concurring practice of the most skilful of the medical profession has so long been directed to this remedy, to the full as much in the maladies of children as in those of adults, that the testimony of our author to its value can now be only considered as an accession to a very large body of proof, and by no means as original and solitary evidence.

The volume concludes with twelve well-selected cases of this disease.

This Essay well deserves a perusal. The subject is peculiarly interesting, though it has not come within the author's plan to speak of its vast extent and the importance which attaches to it in a general point of view. Two observations we shall add, in proof of the peculiarly unfortunate situation in which (with some exceptions however) are placed the infants destined to the care of women who in their *own houses* receive them for hire; the one, that these miserable children are condemned to a most pernicious, because indiscriminate, use of opiates, in one form or other, to quiet their incessant cries of pain; and the other, that the active humanity of this metropolis has more than once been publicly directed to them, in a manner which shews the melancholy truth of all that has been represented concerning these half-abandoned infants.

The Anatomist's Vade-Mecum, &c. by Robert Hooper, M. D. *The Fifth Edition, to which are now added, Anatomical, Physiological, Medical, and Surgical Questions for Students.*

The rapid sale of this Compendium of Anatomy is, in this instance, a merited testimony to its value, and we only here notice the fifth edition, to mention the anatomical questions which make a small accession to the volume. They are 148 in number, and sufficiently well chosen, if it were an object to select just so many from the hundreds that might be asked with equal propriety. But these 148 questions, we are told, are "to be learnt by every student previous to his examination at Surgeon's Hall, the Medical Board, &c." a circumstance which attaches much more importance to them than they would otherwise merit. Does the author mean to assure the young candidate, that these will be the *only* questions asked? and that to obtain the testimonial of having been "*deliberately examined and*

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and found fit and capable to exercise the art and science of surgery," the candidate may not be expected to inform the Worshipful Court of Examiners, how an hæmorrhage of an artery is to be stopped? How amputation is to be performed? How a fractured limb is to be disposed of? How a dislocation is to be reduced? None of which form a part of the 148 questions here set down. In fact, it is only in the Anatomy that the questions are equally full and select: the Surgery, Medicine, and even the Physiology, are highly defective; and in a future edition, we would advise that these be enlarged, and the plan of the questions, which is in itself useful, be confined to special objects, which set the mind of the answerer a reasoning, such as, "What is the cause of the bile regurgitating into the gall-bladder?" than merely such as "describe the heart—describe the uterus, &c."

MEDICAL AND PHYSICAL

INTELLIGENCE.

[FOREIGN AND DOMESTIC.]

Dr. Mœrker, of Marienwerder, relates a curious case, in which a solution of emetic tartar was injected into a vein for the purpose of removing a piece of beef that had stuck in the fauces. A man, sixty years of age, taking beef for his supper, which for want of teeth he was not capable of properly chewing, had a piece of it stuck so fast in his throat, that all attempts to bring it up or down were ineffectual. Mr. Knopf, a surgeon, being sent for, found the man in a most deplorable situation; he could hardly breathe, his face was tumid and blue, and he was very near being choaked. After having uselessly endeavoured to draw the foreign body up or to push it down, the surgeon remembered reading in the late Mr. Schmucker's Surgical Cases, of an injection of emetic tartar into the veins having been practised in a similar case with unexpected success; and accordingly, as no time was to be lost, he determined to try the same expedient. To this end he dissolved four grains of emetic tartar in half an ounce of warm water, and having put the solution into a small syringe provided with a long tube, he injected it into the vena mediana of the right arm; having previously stopt the opening of the vein with his finger, and loosened the bandage round the arm, he directed the tube of the syringe upwards; the injection was made slowly, and the liquor had the temperature of the blood. About a minute after this operation the man turned sick, and soon after he began to vomit violently, by which means he brought up a great quantity of pituita and at the same time the piece

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piece of beef, which was swollen to the size of an egg. The life of Mr. K's patient was saved also by the same means; and the surgeon adds, that after the first vomiting had been over, no other vomition or dangerous symptom ensued.

In No. 3 of the Journal de Medicine, Chirurgie, &c. de Montpelier, the following remarkable case of the effects of Galvanism in hydrophobia is recorded. A man, who had been bitten by a mad dog in the middle finger, complained about a month after of pains in the arm and back, but particularly in the finger. On applying the actual cautery the pains disappeared, but some days after returned, and were attended with symptoms of hydrophobia; the patient could not bear the sight of water, and shewed a great inclination to bite. Under these circumstances the patient was exposed to the action of Galvanism; and as he could not suffer the sight of water or any other lucid object, a Galvanic pile of fifty strata of silver, zinc and pasteboard plates was erected in the adjoining apartment; oblong pieces of blotting paper, which were moistened, served as conductors, and on which the patient was placed with his feet naked. At the moment he opened his mouth to bite, one end of a conducting arch was introduced, the other end of which was in connection with the pile. The patient suffered a great deal after each operation, and found himself so fatigued that he was not able to stand. On this account he was laid on the ground, and the application of Galvanism continued; during which time a perspiration came on. It was intended to repeat the operation the following day, but the patient finding himself well, would not undergo it a second time. A few days after some symptoms re-appearing, he willingly suffered himself to be again galvanised; which being done, he never afterwards perceived any symptom threatening a relapse of his former complaint. It is to be remarked that this person, who was naturally very irritable and nervous, felt for above two months after the Galvanic operation, a particular sensation in the body, which extended up to the shoulders.

Prof. HUFELAND has found the tinctura cantharidum a most excellent remedy in obstinate cases of hooping cough. It is particularly indicated when the disease is of a more chronic character, attended with atony. It may be given with mucilaginous and bitter remedies, or sometimes with bark, in a dose of from three to eight drops four times a day; but in some cases it is necessary to increase the dose by degrees till a slight burning sensation in making water is perceived. He has likewise found it of great use when united with opium, the effect of which is much increased by this combination.

The same gentleman relates the following case of incarcerated hernia, in which he employed the fox-glove with great success. He was called to a young plethoric woman, who had suffered two days;

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days an incarcerated hernia inguinalis, attended with vomition, costiveness, fever, and inflammatory symptoms. She was bled, put into baths; clysters were applied and antispasmodic fomentations, and saline mixtures with oil and opium were prescribed, but all to no purpose; by the opium the fever and heat were considerably increased, and it seemed to be contraindicated by the inflammatory symptoms. He therefore determined to have recourse to the digitalis, which though a strong narcotic and antispasmodic remedy, has the property of acting without heating, and even diminishes the action of the arterial system. He accordingly ordered *one* grain to be taken every three hours with an oily emulsion, and after the patient had continued this medicine for about twenty-four hours, the rupture could be easily replaced by the operation of the taxis, which before had been attempted in vain.

It has been observed by Dr. WELPER of Berlin, that the bodies of persons who have been poisoned with arsenic, frequently withstand putrefaction and are changed into the state of mummies. If this fact be confirmed by more experience, it might serve as a sign for discovering previous arsenical poisonings on dead bodies long after death, and it would be worth while to examine the chemical action of that metal on the organic body. At the same time it would lead us to the discovery of an easy and cheap method of preserving dead bodies against putrefaction, or of making mummies.

The Lectures of the celebrated Anatomist BOGER upon the Diseases of the Bones, have been reduced to a systematic Treatise by RICHERAND, and will shortly appear in the English language.

Dr. KINGLAKE's new work, entitled, A Dissertation on Arthritis or Gout, exhibiting a new View of the Origin, Nature, Cause, Cure, and Prevention of that afflicting Disease, illustrated and confirmed by a variety of original and communicated Cases, will be published in the course of the ensuing month.

Dr. TROTTER's Essay, Medical, Philosophical, and Chemical, on Drunkenness, and its Effects on the Human Body, is in the press, and will be published in a few weeks, being a comment on the Inaugural Dissertation de Ebrietate, &c. Edinb. 1788.

Dr. FOTHERGILL, of the Western Dispensary, has in the press a Treatise upon a very singular and painful Affection of the Nerves of the Face, called by certain French Writers and some others, Tic Douloureux.

Speedily will be published, Medical Sketches of the Expedition to Egypt by the Army from India, by Mr. M'GRIGOR, the superintending Surgeon of the Indian Army.

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Fig. 7.

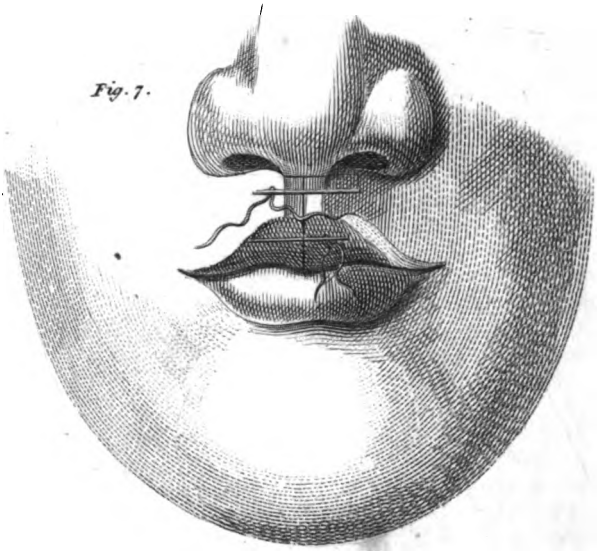

Fig. 1.

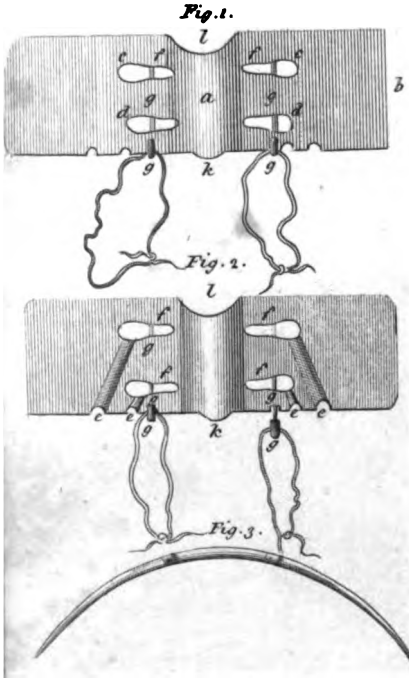

Fig. 2.

Fig. 3.

Fig. 5.

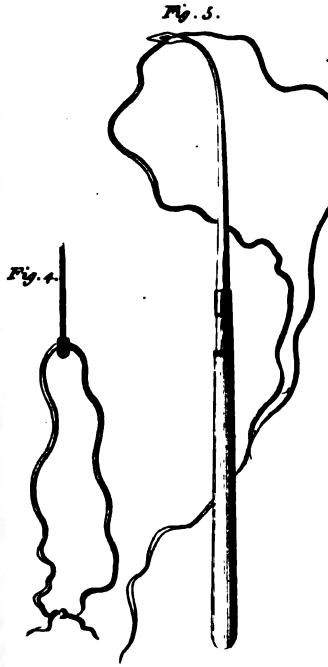

Fig. 7.

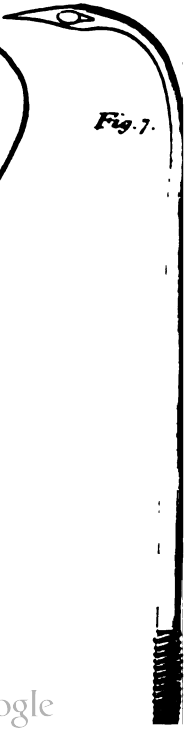

Fig. 4.

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THE

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On a NEW METHOD *of* OPERATING *for the* HARE-LIP, *(Labium Leporinum) by* Mr. RIEG, *Surgeon, at Mentz.*

[With an Engraving.]

AMONGST the different methods proposed for the operation of the hare-lip, the bloody twisted-suture has been approved, as the oldest and most convenient mode of cure, and has received several improvements and alterations in modern times. But this operation requires much accuracy and care, the least mistake being attended with disagreeable consequences; it is also liable to very material objections. In the first place, it seems to be directly opposite to the very purpose of the operation, that we should find no other means to resist the contraction of the adjoining muscles but in the sutures, by which the edges of the wound are intended to be kept in close contact with each other; and thus we endeavour to accomplish in this way two intentions, the former of which must always counteract the scope of the latter; a circumstance very often experienced in the cure of that deficiency. It may be farther alleged, that by the method of cure which has hitherto been in practice, a great deal of irritation and pain is caused, and it has often happened, that even in favourable cases, the cicatrix became uneven and puckered. In order to prevent these inconveniences, which may arise from all the known methods in many instances which we find recorded, I venture to propose a new mode of treatment, by which not only an effectual and certain cure is obtained, but which is likewise attended with less pain and difficulty in the application.

After having separated the adhesions of the upper lip with the gums, and cut off the sides of the fissure, so as to reduce it to the state of a recent wound through the whole extent of it, a small plate of silver, of the same breadth and length with the upper lip, and curved so as to lie close

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on the arch of the upper jaw, is placed under the upper lip, fig. 1. Both ends, and also the corners of this plate, must be round and blunt, to prevent any harm or inconvenience, which it may otherwise occasion to the patient. On both sides of the plate small holes are made, two of which a little nearer to the superior margin, and the two other nearer to the inferior margin, and the distance between those of one side from those of the other makes one third of the whole length of the plate, or about one inch, *a b c d.* This plate serves to keep the lip in its natural situation, and at the same time to render the application of the adhesive plasters and of the uniting ligatures much easier, by covering any unevenness made by the teeth and gums, but especially to prevent the ligatures from cutting or irritating the parts through which they are passed.

The plate being thus placed under the upper lip, the surgeon must take care to stretch the lip equally on it, that the sides of the fissures exactly correspond with each other, and to bring the edges of the sore close together, which is greatly facilitated by the assistant pushing forward the cheeks. Mean while two waxed threads are provided at each end, with flat, double edged, and sharp needles; or at one end may be applied the needle, fig. 5. The surgeon now takes one side of the lip, together with the subjacent plate, either with the thumb and fore-finger of the left hand, or with Bell's curved forceps, and introduces with his right hand, by slightly lifting up the plate, the point of the needle into a groove which is on the inferior superficies of the plate *e*, till he arrives at the superior hole on that side, through which the needle being pushed, he perforates the upper lip and at the same time a small piece of sponge; the needle being detached from the thread, the latter hangs down the upper lip. This being done, the surgeon takes the needle of the other end of the same thread, and passes it in the same way, through the inferior hole of the same side; and having disengaged the needle from the thread, he gives the two ends of the thread to the assistant.

Before the threads are passed through the other side, the surgeon is to see that it is equally stretched above the plate, and thus drawn and pressed to the other side, that the edges of the wound, situated between both threads, may be easily and closely united. This being performed, the surgeon introduces the threads at the other side, in the same manner as before. In order to promote the accurate contact of the edges of the sore throughout its whole extent,

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tent, incisions, *f*, are adapted on the plate, running from the holes towards the middle, by means of which the threads, if drawn tight, contribute towards pressing the edges of the wound more closely together. To prevent the thread from pressing or cutting the lip at one side more than at the other, the incisions, *f*, may be shut up by means of pins on each side, g, provided at one end with a knob, perforated with a small hole, through which a thread may be passed, in order to draw the pin more easily out, if required.

If by drawing the threads tight, it should be found that the edges of the wounds are not in close contact throughout the whole extent, one of the pins may be drawn out at the side where it may be thought most proper; and if this does not suffice, the pin at the opposite side may likewise be drawn out, by which means the edges of the fissure can be brought on each side one line and a half nearer to each other. Where the thread issues from the lip, a small piece of sponge is placed, serving to diminish the pressure on this part. When the margins of the wounds have been closely and equally united, the surgeon is to tie the undermost threads with a chirurgical knot (while the upper threads are drawn tight), and afterwards the upper ones; the knot however being made at the side of the wound, fig. 7. The union of the edges is besides greatly supported by oblong pieces of linen, spread with good adhesive plaster, and reaching from one ear to the other.

When there is a great deficiency of parts, and when the edges of the wound are brought with difficulty together, the following plaster bandage may be applied with advantage. Two large pieces of leather, narrow at one extremity, and reaching to where the threads issue out of the lip, are spread with good adhesive plaster, and on them compresses of the same size should be fastened; at the narrow end, three threads are fixed, crossing each other on the wound, and are fastened to a double headed bandage, which becoming by degrees broader, ends in two small heads. Having applied the leather on the cheek, this bandage is fastened on the compresses by means of pins, while its smaller heads are carried round the neck and head circularly. This bandage is not so easily loosened; and without much incommoding the patient, it has the advantage of supporting the muscles of the cheek, and preventing their retraction. If the fissure is not in the

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middle of the lip, the plate should be purposely made, so as to be adapted to the particular case.

In applying the plate, it is of much importance to have the lips sufficiently stretched and tightly drawn together, when the needle is pushed through the hole; but this must be particularly observed in perforating the other part of the edges of the sore, otherwise they will become uneven. This, however, may be always prevented by proper attention; but with a view of guarding against it as far as possible, a small round prominence, *k*, is adapted to the inferior margin of the plate, serving as a guide how far the edges of the fissure are to be extended. It is unnecessary to draw the margins of the sore together before the needle is carried through, but only to bring the plate under one portion of the lip, till the inferior margin of the fissure covers that prominence, or reaches a little above it; while the ligature is only introduced but not drawn tight. Having in the same manner laid the plate under the other portion of the lip, the two edges of the sore will, on drawing the ligature tight, be closely and accurately united. In the middle of the superior margin of the plate an hemispherical segment is cut out, by which it is intended to give the lip full liberty to adhere to the gums, or to receive in it the frenulum. The plate may be made of gold, silver, or any other convenient metal, and also of whalebone, &c. and can be likewise conveniently used in the case of a double hare-lip.

The advantages which seem to arise from this mode of operation are the following: 1. The edges of the wounds are kept in close contact with each other, without being irritated by the retraction of the adjoining muscles. 2. The manner in which the needle is passed through, gives the least pain. 3. The irritation being less, not so great a degree of inflammation occurs as is caused by the common method. 4. The troublesome and sometimes dangerous oozing of the blood is more easily prevented by this than by the common method; and also the sucking of the blood, which is, in some cases, attended with dangerous consequences. 5. The plate prevents the new and disagreeable adhesions of the lip to the gums, which has sometimes taken place after the operation. 6. The bandage is not so readily loosened; and much trouble is saved, as it is not necessary to have needles, the points of which must be either removed or sufficiently covered, in order to prevent their wounding the contiguous parts. With respect to the subsequent treatment and the removal of the ligatures, nothing new or particular is required.

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Mr. Rodman's Case of Tumour of the Eye, Vol. XI. p. 197.

Fig. 2.

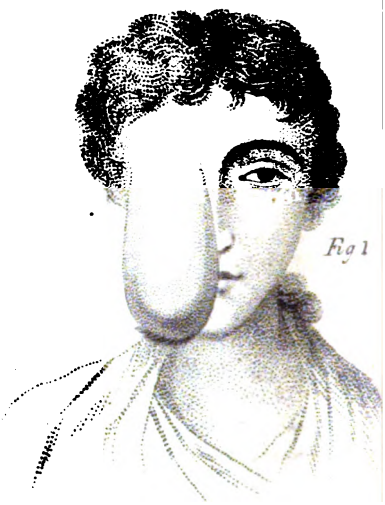
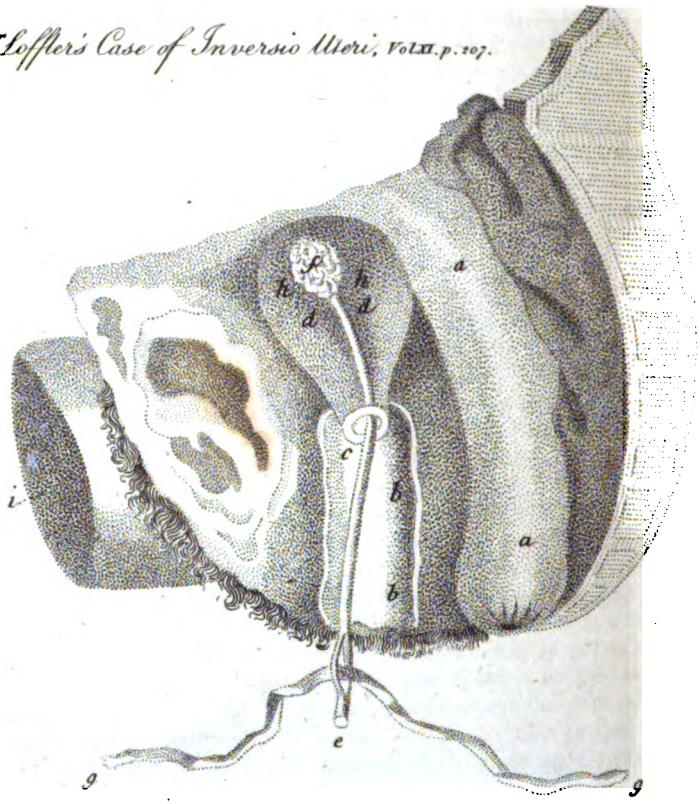


Fig 1

Dr. Loffler's Case of Inversio Uteri, Vol. XII. p. 107.



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EXPLANATION OF THE PLATE.

Fig. 1. The curved plate, made of silver, &c; *a*, the middle part, making about one-third of its whole length: *b*, its margin, which must be made thinner than the middle part; *c*, the two superior holes; *d*, the two inferior.

Fig. 2. Shows the concave inferior superficies of the plate; *e*, the grooves which lead to the holes; *f f f f*, the conical incisions, each being about one line and a half long; *g g g g*, the pins for shutting the incisions; *k*, the round process; *l*, the hemispherical excavation.

Fig. 3. Shows the thickness and curvature of the needle.

Fig. 4. A pin drawn out.

Fig. 5. A curved needle, with a flat handle to it.

Fig. 6. The same magnified, showing that it is screwed to the handle.

Fig. 7. The appearance of the parts, after the ends of the ligatures are made tight, and the union of the edges of the sore accomplished.

Case of Tumour of the Eye; *communicated by* Mr. John Rodman, *of Paisley.*

[With an Engraving.]

In August, 1801, Margaret M'Lean, ætat. 12, while amusing herself with some companions, accidentally struck her forehead against a wall, by which stroke she was at first a little stunned; but soon recovered, and resumed her play. No complaint was noticed till the fifth day after, when she felt a pain in the forehead, over the left eye. This pain increasing, inflammation and evident enlargement of the eye quickly succeeded, which being treated with leeches, blisters, eye-waters, &c. without the desired effect, she was admitted into the Glasgow Infirmary on the 7th of November following.

It appears by the first report, that she had a fixed pain in the left eye and forehead; the vessels of the adnata were universally red and turgid; the eye considerably protruded, forming a regular smooth tumour, except at one part, where a small portion of it extended beyond the palpebræ, and the sight was entirely gone. Her appetite was good, and the general state of her health little impaired. Common cataplasms were applied to the enlarged eye; the vessels of the adnata were divided; the cornea was opened with a lancet, and a small quantity of pus discharged, mixed with part of the aqueous humour. No material benefit having been derived from this variety of treatment, the surgeon in attendance proposed to extirpate the eye; but as she and her parents were averse to it, she was dismissed by desire on the 28th of the same month.

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Believing herself relieved by the use of bread poultices and rejecting every necessary medical advice, she persisted in applying them to the increasing tumour till the 18th of August, 1802, when, for the first time, I was desired to visit her, and took the following statement. Pulse 130, remarkably feeble; face and lips almost without a tinge of blood; her body is so emaciated, that it resembles a skeleton covered with delicate skin, through which the livid veins are seen. Notwithstanding the considerable quantities of laudanum given, to alleviate her pain and procure rest, she has not been known to enjoy sleep for several months. The tumour hangs down beyond the chin, and covers great part of the mouth; it is 7 ½ inches long; and being of a conical form, its base is 11 inches in circumference. The palpebræ are so very much extended as wholly to surround it. Fig. 1, represents this state of the tumour, with the cilia at the bottom. There is a foul ulcer between the cilia, from which frequent alarming hæmorrhagies have taken place since April last; another ulcer, formed a few days ago on the left side of the tumour, is spreading rapidly, and discharging such fœtid matter, that to remain in the room where she is, for a short time, becomes extremely distressing.

I was now told she had determined to have the tumour removed, and intreated to lose no time in preparing for the operation. To this I could by no means assent at once, having made the above observations; it was reasonable to believe from the general appearances that she could not survive many days; and should she die soon after the operation, I might not only be blamed for rashness, but it might be an instance ready to produce against a similar operation under different circumstances. With a view to satisfy her, however, I procured a consultation of my medical brethren, whose kind and useful assistance on such occasions, I take this opportunity gratefully to acknowledge; and after maturely deliberating upon the state of the patient, it was unanimously agreed to form some plausible apology for deferring the operation. I did so, but she received it with visible marks of disappointment. Early next morning I was sent for again; found her uncommonly anxious to have the operation performed, and, in the eagerness of desire, she wept, crying out, "If I recover, it will be unexpected happiness; I would die rather than exist in this state of pain and wretchedness." Accordingly, with proper assistance, I extirpated the tumour, removed all the diseased substance within the orbit, covered the cut surface with spunge to prevent any hæmorrhagy.

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gy, for she was very faint though she lost little blood, applied the usual dressings, and laid her to rest. For this state of it, see Fig. 2.

She slept well the first night, was much easier next day, seemed cheerful, and after expressing her thankfulness for what I had done, assured me that she found more ease since yesterday, than she experienced many months before. A serous bloody fluid oozed from the wound till the fourth day, when the dressings were removed; and as the spunge could not be taken away without giving great pain, I contented myself with cutting off a part of it at every dressing. This gave her no uneasiness, and the wound was cleared of it in six weeks. By that time the orbit was nearly filled with healthy granulations, and in every other respect she was doing well, suffering no pain, enjoying sound sleep, and taking food; in short, her health was so much restored, that she could attend to some amusements, and was frequently carried into the garden. Towards the end of the seventh week, a small livid fungous tumour appeared at the internal angle of the orbit, where a deficiency of bone was discovered during the operation. It resisted every variety of caustic applied, became firmer, and pushed the granulations aside. Ten days after the appearance of this tumour, the surface of the sore changed for the worse; her pulse quickened, with diminished appetite; the sight of the right eye gradually failed, till she became blind; diarrhœa ensued, ending in bloody stools; and she died in the eleventh week after the operation. Being sensible of approaching dissolution, the day before death, she remarked, with a considerable degree of gratitude, that "she suffered more pain in one day before the operation than she did ever since."

Dissection, twenty-four hours after Death.

Having exposed the contents of the cranium, no mark of disease could be discovered; but upon pressing behind the diseased orbit, a large hard body was felt. After cutting up the dura mater and removing the brain, which seemed free from disease, this body was found lying between the orbit and dura mater, to which it adhered by means of slender vascular filaments. It was of a white colour, very irregular, extending as far back as the sella turcica, and considerably to the right of the crista galli. Its surface was hard like a body approaching to ossification, but towards the base of the cranium it had a gelatinous appearance whiter, and more consistent than pus. The livid tu-

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mour observed on the seventh week after the operation which I attempted to destroy by caustics, was a branch from the internal tumour. Another branch had forced itself into the left nostril some time before death, which in every respect resembled a very firm polypus. On the left side there did not remain the smallest vestige of the optic, nor any nerve to the seventh. The right optic nerve was preternaturally enlarged and surrounded by the internal tumour, from the sella turcica forward. After all the diseased substance was extracted, a most extraordinary deficiency of bone was observed. The left orbitar processes of the frontal, malar, and maxillary bones were consumed, except at the external canthus, where a small portion of the two first bones remained, carious, and thickened. The os unguis, with the whole left side of the sphenoid and ethmoid bones were wanting; indeed, every portion of bone which had been in contact with the tumour was either softened or destroyed. A probe passed freely through the body of the sphenoid bone into the nostrils and palate. Another tumour, which had appeared for some weeks, extended before death from above the superciliary ridge to the apex of the nose; it was an inch and a half broad, and near an inch deep. The bones with which it was connected were also softened, and though it resembled the firmest part of the internal tumour in colour and consistence, they were totally unconnected.

December 19, 1804.

Some OBSERVATIONS *on the* PATHOLOGY *and* PREVAILING DISEASES *of* WARM CLIMATES; *by* A. PEARSON, *Member of the London College of Surgeons, and Surgeon in the Service of the East India Company.*

(Continued from our last pp. 158—168.)

THE ventilation, which hot climates permit and demand, is a powerful cause why people in them are less liable to the contagious forms of febrile disease; I place the typhus icteroides out of the question, having had no opportunity of seeing that disease. In the early part of a passage from this country to India, and in crowded ships, a fever arises from the accumulation and effect of human miasmata, which is to be regarded as the typhus navium, and it in general corresponds to the nosological definition of that disease.

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disease. In some cases, there is much more heat and vascular action than the definition supposes, and in others we find cough, and some degree of pneumonic affection. Writers on this subject, mention a peculiar burning sensation (calor mordicans) excited on the fingers by feeling the pulse as a diagnostic; where I have had opportunities of observing the disease, I have not been sensible of this symptom. The treatment best adapted, seemed to be sponging the body, and especially the lower extremities, with cold or tepid vinegar and water; an emetic at the commencement; laxatives pretty frequently, but not so as to induce full purging; spt. Mindereri with spt. ætheris, vitriolici seu nitrosi, decoction of bark with confectio cardiaca & vitriolic acid; 5 drops of tincture of opium, given every second hour alternately with a glass of port wine; anodyne draughts; blisters to the breasts and thighs; decoction of bark and serpentaria; a cordial diet as soon as the powers of digestion are recovered. No preventive means ought to be omitted; these consist of frequent and effectual ventilation by windsails, and opening the ports of the ship; by getting up the hammocks daily; by cleanness and dryness of the decks; by personal cleanliness; by not allowing the people to remain below when the ships are crowded with soldiers, not even at meals; by fumigation with nitrous fumes, as pointed out by Dr. Smyth, by white washing, and sprinkling with vinegar.

In the warm climates, the attacks of febrile disease are generally accompanied with symptoms of bilious absorption, and torpor of the intestinal canal, and with a greater or less tendency to remission.

The treatment recommended by authors is very contradictory; some advising a continued and severe evacuant plan, while others administer bark on every appearance of remission, and even without waiting for any. If purging with calomel and neutral salts is assiduously practised in the first days, giving intermediately mild diaphoretic and antimonial medicines, the use of bark will be found unnecessary, or may be entered on with much greater safety and advantage. I am doubtful if the genuine remittent fever appears without a previous exposure to the exhalation of marshes, or that from rank vegetation; and the distinct remissions and exacerbations described in books, are not frequently to be met with. In remarking upon this, I will consider it as I have seen it at Bencoolen, which is an unhealthy situation; and the disease as it appears there is, I believe, the endemic of Batavia in general, answering to the

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the nosological definition of the tritæophya paludosa, frequently however with a shorter remission, the apyrexia being in different cases more or less complete. It is frequently some time after the application of the remote causes before the disease comes on, as is proved by its not appearing in a ship which has received it there, frequently a fortnight after leaving the port. The peculiarity of its attack is in the symptoms of determination to, and congestion in the head, the throbbing of the temples, flushing of the face, hurry and incoherence of thought. It is in this state that the rapid dissolution which sometimes follows the attack takes place, otherwise the disease will run out to a considerable length, and even for years, with intervals of imperfect convalescence, the complaint then carrying off the patient during a cold fit, or by an attack of dysentery, or rather of colliquative diarrhœa. The other symptoms are nearly as detailed in books. The debilitating effect of the marsh miasmata is generally recognized, (the sedative effects of hydro-carbonate gas, proved to form a considerable part of them, is well known) and it is probable that the nervous energy and muscular irritability, are much and suddenly impaired by their impression upon the sensorium; the powers of circulating the mass of blood are for a time diminished; from that, and irregular actions of the vessels of different viscera, a relative degree of plethora and inflammation takes place, while, from the excretories being similarly affected, the power which the economy possesses to rid itself of an excess of heat is abated. In such a state, it is not surprising that congestions should take place in the brain and glandular viscera, and such symptoms of nervous and vascular excitement, as above related, be the consequence.

This attempt to state the operation of remote and proximate causes is made principally with a view to the treatment, and to inculcate caution as to the means generally resorted to; I mean, in the use of general blood-letting, large and frequently repeated doses of stimulant purgatives, and affusion of cold water. It is probable that less hazard will be incurred, and greater benefit derived, from an immediate restriction to the antiphlogistic regimen in all its branches, especially in abstraction of the stimuli of light, heat, and exercise, in a free but guarded use of calomel and saline purgatives, in sponging the body with cold or tepid vinegar and water. The disease however, in this violence of symptoms, is not very frequent, and it is most commonly seen as described

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in books. At the commencement to avoid emetics, to procure free evacuations of the bowels by calomel, neutral salts, inf. sennæ, c. tart. solub. and when the calomel affects the mouth, the disease frequently disappears. During the first days, and at all times during the hot stage, nitrous, camphorated, or the common saline medicines with antimonial wine. An early recourse ought be had to the use of the bark during the remissions, but it will not be found to be so generally admissible or efficacious as some publications would lead us to expect. Where there is increased biliary secretion, irritability of the stomach, or an obstructed state of any of the viscera, it will be rejected, and the beneficial effects from it precarious. It is proper, however, to give it a trial under different forms when the substance disagrees, and the infusion or decoction may be made trial of along with the tincture, extract snake-root, angustura, vitriolic acid, or other combinations. In whatever form, the doses ought to be as large and frequent as the stomach will bear, during the remission only, and joining it with such a portion of p. rhæi, magnesia vitriolata, or other laxative, as may produce two stools in the 24 hours. More effectual doses of calomel and other laxatives may be given from time to time. In case of the disease resisting these means, small doses of calomel, with or without opium, and continued for some length of time, may be had recourse to. Where there was much retching, fomentations, blisters, and cataplasms, applied to the pit of the stomach, and the saline effervescing draughts, are of use; and where the debility is so great, that danger is apprehended from each returning paroxysm, an opiate given in warm wine will sometimes prevent the accession, and interrupt the morbid habit.

The use of opiates however in these affections, or indeed in any of the diseases occurring in European constitutions in hot climates, is not generally beneficial, nor to be adopted but with discrimination. As there are very different states of the constitution at different periods of the progress of the disease, the regimen is to be adapted to these as they occur; the antiphlogistic, nutritious, and cordial plan of diet must be had recourse to in their turns. The intermittent fevers are occasionally met with in warm climates, and are more prevalent in China than in any other part of the East; there the summer and autumnal heats are succeeded by cool and wet weather; the face of the country is flat, marshy, and subject to be overflowed. The customary practice is followed in the treatment of them. An

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emetic given at the commencement, and repeated from time to time in the course of the disease, laxatives, diminishing the dose and frequency of their administration as it advanced. The bark in different forms and combinations, given as early and as copiously as possible during the apyrexia; and as in such situations, torpor of the intestinal canal and bilious secretions are not unusual, from one to four grains of p. rhæi, or ʒj. of tinctura aloës added to each dose will be proper. Alterative doses of calomel, flores zinci, chamomile flowers with ferrum ppt. in the form of an electuary, were tried in their turns, and found to be useful. Of the effects of arsenic I have no experience. With regard to the compression of arteries with tourniquets, it has appeared to me that where it was early had recourse to, and the paroxysms were stopped by it, a dysenteric action of the bowels was apt to supervene; where the disease was of longer standing, it was extremely useful by interrupting the habit of morbid action, without any such unfavourable consequences.

It may be proper to advert here, to what is called the lunar influence; and however unaccountable the connection between that and the human frame may be, and however sceptical the mind regarding it, a careful observation of diseases in these climates will corroborate the inferences of Dr. Balfour, that the attacks and fatal terminations of febrile disease and of dysentery, a disposition to contraction and retention in the intestinal canal, aggravations of spasmodic and nervous affections take place most frequently during the lunar periods, *i. e.* in 50 hours before and after each new and full moon; he points out diurnal and quarterly effects of the same kind not so observable, as well as equinoctial periods.

What are called bilious attacks, are frequently to be met with in warm climates, and are often perplexing to the young practitioner, to whose mind (if he does not attend to the state of the pulse, which is but little altered) a loose analogy will present the idea of a violent fever from the retching, yellow suffusion of the face and eyes, whiteness of the tongue, general perturbation and irritability. It is to be treated at first by laxatives and gentle diaphoretic medicines, and a liquid abstemious regimen; after the first two or three days, calomel, and the more powerful cathartics may be given.

The purely inflammatory diseases of warm climates are few in number; while in the European constitution, those of a mixed inflammatory description are not unfrequent; this

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this is proved by dissections in different epidemics, where an inflamed state of the stomach, of the colon, membranes of the liver, &c. have been detected.

The hepatitis is the inflammatory disease most frequently met with; but a considerable variety of modifications, and very different states of hepatic affection existing under that name, it will be useful to attempt at least to discriminate them. When a constitution such as has been before described, of plethora and accumulated excitability, is first subjected to the stimulus of heat, frequently at the same time the organ itself is locally excited by the application of animal food, spirituous liquors, and other acrid ingesta, with only the intervention of the coats of the stomach, it is not surprising that active inflammation should take place. This is denoted by severe pain in the right hypochondrium, febrile affection, cough, pain at the top of the shoulder, retching, &c. This once induced will be apt to recur as inflammations in other parts, and may terminate in suppuration; but the very acute form of the disease is not that which is generally met with. A morbid sensibility, and readiness of the organ to take on inflammatory action; a want of activity and muscular power in the branches of the vena portarum, giving rise to congestion, and an irregular and vitiated secretion and discharge of the bile; induration of the glands, and obstruction of the vessels, approaching to scirrhus, or actually in that state; and these combined with symptoms of impaired digestion, loss of tone, and increased incitability of the system, are the most frequent varieties of hepatic affection.

We have no accurate diagnosis, by which to distinguish between affection of the liver arising from the above causes, and that which is connected with scrophulous tubercles; nor yet from the mere enlargement of the organ without morbid alteration of its substance or structure, which frequently I believe takes place, when the power of the absorbents in renewing solid parts is diminished; or even from the symptoms produced by a temporary congestion, either in the organ itself or the adjacent viscera, as the stomach, or ascending colon. We are in a similar difficulty to ascertain whether suppuration has taken place or not; it has frequently been found to exist where it had not been suspected; and, on the other hand, where there were several symptoms to denote it, it has not been found. From the matter being shut up, the more decided symptoms of hectic are wanting, and quickness of pulse, irregular febrile accessions, and flushing, are so often attendants of the irritable

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ritable state brought on by residence in hot climates, that they afford no certain criterion. An obtuse pain in the right hypochondrium is mentioned as being a symptom; but this occurring in all the different states of the complaint, often where there is no hepatic disease, must be a fallacious one. Its being so generally stated by authors to be a diagnostic, has the unfavourable effect of alarming the apprehensions of those who have morbid sensations in that part, and who are in general sufficiently prone to indulge exaggerated feelings or fears on the subject of their health or sensations.

It is obvious, that in all these varieties of disease the same mode of treatment cannot be adviseable; and with a view to practice, it must be ascertained under which of the states the symptoms appearing are to be classed. If under the circumstances, and with the symptoms of active inflammation, general blood-letting is adviseable, and safe to a greater extent than is commonly practised, locally also by cupping or leeches; fomentations, blistering over the seat of the pain, and dressing the blister with mercurial ointment; above all, by mercurial purges given in repeated doses, as calomel from two to four grains every two hours till purging is produced; and when the state of the stomach permits, neutral salts, otherwise the calomel continued; a very dilute solution of tartarized antimony, but never so as to excite vomiting; a total abstraction of the stimuli of light and muscular action, and of heat as far as that can be affected; a diet diluent and vegetable; and these means repeated or continued till the severity of the inflammation is abated. Some torpor or obstruction of the circulating vessels, and pori or ductus biliarii, have, it is probable, preceded this attack of inflammation; at any rate, after the excessive action, they are left in such a state, or in one very ready to assume it. It is then that we may expect the greatest benefit from a mercurial course, conducted by friction of the ung. hydrargyri upon the right side, the blue pill taken by itself, or united with calomel; calomel occasionally in purgative doses; these are to be employed so as to produce some spitting, and the mercurial action kept up by the same means, for weeks or months afterwards; at first, rather a spare diet, and afterwards a more nutritious one; to abstain from stimulating drinks, to use horse exercise, and latterly, but with much caution, tonics or chalybeates, accompanying them with the use of laxatives.

These comprehend the greatest part of the resources in the treatment of chronic hepatitis, or schirrus, and the state

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state of the circulating and secretory vessels, which leads to these complaints. When these fail, a removal to the native or a more northern climate becomes necessary; and from this state there are frequent recoveries effected by such a change; but a residence of a complete year is in general requisite before the feelings are pleasurable, or the actions of the economy are restored to their healthful state, and then it is probable that the benefit accrues, when the obstruction is of that kind to admit of being removed by the efforts of the system in the gradual absorption and renewal of solids.

As before mentioned, the diagnostics of the different species of hepatic affection are not well marked. The existence of scrophulous tubercle giving rise to the symptoms of it must be inferred from observations on the habit, and in it, as well as confirmed scirrhus and hepatalgia, or pain seated in the organ, or right hypochondrium, which have resisted repeated mercurial courses, it is best not to attempt by a long protracted use of this medicine to remove it. The irritation and debility induced by it, do more than counterbalance the deobstruent effects of its stimulant operation. A regimen, such as has been before recommended, nutritious, but not stimulant or viscid, taking care not to overload the organs, a total abstinence from vinous, spirituous, or fermented liquors, horse exercise, and even cold bathing. Bitters, tonic and chalybeate medicines, given so combined with laxatives, as p. rhæi or aloes, and perhaps natron, as to be to the intestinal canal a stimulus, such as that which the bile affords, and which in such a state is sparingly and imperfectly secreted; blisters applied to the side; a discharge kept up by issues, or setons placed near to the situation of the pain, will likewise be found useful. In this state also the patient cannot expect a cure, or even effectual relief, but from returning to a colder climate; nor then, but from a long continued and careful observance of the plan of regimen and medicine pointed out.

Case of an Inversio Uteri. *By* Dr. Loffler, *of Petersburg.*

[With an Engraving.]

A Woman of a bloated and full habit, mother of several children, received in her last lying-in, by the rough and improper extraction of the placenta, an inversio uteri; but as

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as it was soon replaced by a skilful surgeon, and as the woman was ordered to keep for some time a situation on the back, the uterus perfectly contracted, and remained in its natural situation; shortly after she left the bed, and went to her usual work. In the course of two years she became again pregnant, and during the whole time she enjoyed the best health till the proper time of delivery, which went on rather quickly; and the midwife, instead of protracting it, imprudently accelerated it as much as possible. What had occurred in the preceding delivery took place in this; and the fundus uteri being inverted, descended to the orificium uteri. It was however fortunate that the midwife discerned this accident, and I was accordingly called to her assistance. On examination I found the uterus to have passed through the orifice, and I felt in the vagina a soft and bloody tumour, *(completa partialis inversio.)* The placenta had passed away, and it was a happy circumstance for the patient, that the hæmorrhage was only moderate. As the orifice of the uterus had a little contracted itself, the uterus became slightly incarcerated. I immediately attempted to replace the uterus in the horizontal situation in which I found the woman, but should this not succeed, I intended to lay her forward on the knees and elbows, in which position I certainly hoped to perform the reposition. I attained my purpose however not without some difficulty and pains, by the following method. Having introduced my right hand into the vagina, I spread my fingers round the tumour formed by the uterus, so that the fundus rested in the hollow hand; and having previously compressed it gently, and drawn it a little forward, I endeavoured to push it back by degrees and with gentleness, in which, after some repeated efforts, I at last succeeded. The fundus uteri having thus receded through the orifice of the uterus, I pursued it with my hand, which I kept in the uterus, waiting for the uniform contraction of this organ. But after I had continued in this position above half an hour, without perceiving any contraction, I was obliged to withdraw my hand, when the fundus immediately descended, though it was prevented by the patient's posture on the back with the pelvis elevated, and by introducing a sponge which had been provided with a string into the orifice to pass through it. This circumstance made me think of a perfect atonia of the uterus, which could easily have been avoided if the woman had been delivered in a horizontal posture, in which her labours would not have been so violent, and if the waters had been sooner discharged

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discharged, and the head of the child suffered to pass through by degrees. After the patient had reposed a little, I applied cold injections of vinegar and water, which mixture was also often thrown by means of a syringe on the belly; but as this remedy would not produce the least contraction, I had recourse to stronger stimulants, injections of brandy, of salt water, and of water of ammonia, ordering at the same time the belly to be rubbed with vinegar, and giving excitant remedies internally. All my endeavours however were ineffectual, and after having continued these applications above twelve hours the uterus remained in the same state as before.

I now desisted from the application of external and internal excitantia, and also from the employment of stronger ones, being fearful of bringing on an inflammation, which I knew from experience to be always dangerous in an atonic or paralytic organ; and adopted a mechanical expedient for removing the inversion; and though I could have prevented a total inversion and prolapsus out of the vagina by means of a pessarium, I could not acquiesce in having recourse to it, before I had tried another expedient which presented itself to my mind, and which I flattered myself would be capable of effecting a perfect cure, by keeping the fundus uteri at a distance from the orifice and by elevating it, so as to render the uterus fit for contraction with the assistance of proper remedies, and thus to make a radical cure. For this purpose I procured a tube, made of horn, long enough to reach up to the fundus uteri; it was bent according to the axis of the pelvis, and had two holes on the upper extremity, by means of which a sponge could be fastened; at *a*, the lower extremity, another hole was made, through which a string was drawn, which could be fastened to a bandage round the belly, whereby the instrument was kept in its proper situation. With this instrument I gently pushed the fundus uteri upwards, and supported it in the proper situation. This operation being performed without much difficulty, and attended with little pain, the patient felt no kind of inconvenience, and the lochiæ passed off with ease. By making this support of the uterus hollow, and by providing it at the upper end with several holes, I had the advantage of being able to make injections into the uterus without difficulty, which was performed twice a day, with a decoction of flores arnica, in order to excite the paralytic powers of that organ. When this had been continued several days, during which the patient remained quietly in

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bed, she felt some pains, which gradually increasing, became exactly like those of a woman in labour, whereby the uterus contracted, till the instrument was entirely protruded out of the uterus, and I could take it easily away. On examination, I found the uterus perfectly contracted and the orifice shut. I ordered injections into the vagina to be continued with a decoction of willow (cort. salic. fragil.) The patient gradually recovered her health and strength, and was completely cured of the complaint.

EXPLANATION OF THE PLATE.

a. a. The intestinum rectum.
b. b. The vagina.
c. The orifice of the uterus.
d. d. The uterus.
e. The lower extremity of the instrument with which the uterus is supported.
f. The upper extremity where the sponge is fastened.
g. g. The string by which the instrument is fastened.
h. h. Openings in the hollow supporter, through which the injected liquor passes.
i. Part of the thigh.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE discussions which have taken place respecting that species of tumour, mentioned in my volume of *Practical Observations* lately published, to which I have given the name *fungus hæmatodes*, seem to call for some attention on my part; as it is of consequence to mankind that diseases should be accurately known, and carefully distinguished.

Your valuable correspondent, Mr. Simmons, of Manchester, is of opinion, (see Journal for July 1803) that the disease is a spurious aneurysm; while another gentleman of great experience, who takes much interest in the newly established Institution for the investigation and cure of cancerous diseases, is pleased to consider the fungus hæmatodes as a species of cancer.

A difference so great in the ideas of medical men, respecting the disease in question, will naturally excite a suspicion, that there is something obscure in the nature of the

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the complaint, or in the description given of it. The subject may, therefore, merit a little farther investigation.

Before I proceed to examine the opinion of Mr. Simmons, I must observe, that he considers the disease of the knee-joint, described by Mr. Russell of Edinburgh, and called by him "an uncommon disease," as the same which I have described under the term of *fungus hæmatodes*. (See Med. & Phys. Journ. for July 1803, p. 2.) But whoever will carefully compare our descriptions must see a considerable difference between them.

1. Mr. Russell considers the disease, which he describes, as peculiarly affecting the knee-joint; whereas I have never yet seen the fungus hæmatodes affecting that joint, though I have seen it in most parts of the human body. Although the tumour in Case 1,* began on the side of the knee near the patella, and remained fixed in that part above half a year, before it extended up the thigh; yet, after amputation, "the joint of the knee was found to be perfectly sound." †

2. Mr Russell describes the substance forming the tumour in his cases as "almost transparent and colourless, and a soft gelatinous consistence." p. 75. Whereas the fungus hæmatodes has always, after amputation, been found by me quite opake, "of a variegated reddish colour" mixed with white or grey, and of a greasy or unctuous nature, "nearly resembling the medullary part of the brain." p. 237.

3. In Mr. Russell's cases, "every patient," (except one, whose disease was somewhat different from the rest) "on whom amputation was performed, died from the hæmorrhage—which invariably occurred in every case of the disease, and at very different periods from the date of the operation." p. 77. On the contrary, all the patients, upon whom I have seen amputation of an extremity performed for the fungus hæmatodes, have recovered without any disposition to hæmorrhage subsequent to the operation.

These circumstances certainly point out a material difference in the nature of the diseases described by Mr. Russell and myself; I shall, therefore, confine the following remarks to the cases which I have related, and proceed to shew, that several of them bore no affinity to the spurious aneurysm, nor to cancer.

In performing the operation of amputation in Campi-

* Practical Observations, p. 233. † Ibid. p. 239.

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net's case, (Case 1, p. 231) I left a small superficial part of the sac, near the extremity of the stump, not doubting that this wound in the integuments would soon granulate, and heal together with the extremity of the stump. No surgeon, I suppose, can imagine that this superficial sore could cause a spurious aneurysm. "The granulations of flesh upon the stump became good, and the progress of healing was favourable." Nay, "that small and superficial part of the great sac—was healed;" yet a tumour rose beneath the cicatrix, containing a soft substance, like the brain, which formed for itself cells in the surrounding parts. Two attempts to extirpate this substance proved fruitless, so that I was obliged to amputate a second time, when I found the femoral artery not "incontracted," but impervious.

In Mrs. Storr's case (Case 4, p. 264), I extirpated a tumour in the mamma, and "about six weeks after the complete cicatrization of the wound, Mrs. S. began to feel a constant uneasiness in the part, and perceived it to be tumefied." Has such a disease as this any affinity with the spurious aneurysm? Yet this tumour was formed by a mass of unctuous matter, similar to that described in the first case.

Again, I extirpated the whole of this mass, with the assistance of Mr. Lucas," so that "no part of the integuments was left that had the least morbid appearance; and the disease seemed to be completely removed." p. 266. "The wound was soon filled with good granulations, and the cure proceeded in the most favourable manner for three weeks." Surely Mr. Simmons will not say, that there was any circumstance in this case that could give rise to a spurious aneurysm? The whole case completely excludes any such idea. Let any experienced surgeon read this case with attention, and he must acknowledge, that the morbid fungus, repeatedly formed, and repeatedly removed, can never with any propriety of language be classed under the head of spurious aneurysm.

The same reasoning will apply to such cases as that of James Richardson, where the tumour was situated "on the posterior part of the shoulder,"—"between the integuments and external muscles," (Case 9, p. 277, 278.) and "had arisen to a considerable size before the patient was aware of its existence." He remembered no circumstance that could have given rise to this tumour. He died about ten months after I last saw him. His widow informed me lately, that a substance broke through the skin about ten weeks

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weeks before his death, and grew to the size of a man's head. It bled frequently, as if blood had been squeezed from a sponge.

Mr. Simmons supposes that I, and others who saw the operations which I have described, were deceived in thinking the morbid masses to be organized, and declares, "that he cannot yield assent to the existence of it" (organization) "until injections have fully established the fact."—He imagines, that upon our handling the masses, we only made way for the flux of blood recently effused from the ruptured arteries. But Mr. S. in this objection, overlooks the fact related by me, that in several of the cases blood issued from the masses when they were not handled. In Mr. Ward's case (Case 6.) the fungus bled considerably after it had been punctured with a lancet by an old woman, under whose care he had placed himself, p. 271. The delay of a week in performing the operation, which arose chiefly from his own reluctance, was the cause of his being "much reduced by the loss of blood from the fungus," p. 271, though his leg was kept still in a horizontal position during the greatest part of this interval.

In the case of Ann Wood, (Case 10.) who was Mr. Logan's patient, a hæmorrhage took place from one of the excoriated parts" of the fungus, "three months before her admission" into the Infirmary, "at which time she lost about eight ounces of blood, p. 280. The fungus bled repeatedly, though in small quantities after the young woman was taken into the house. If Mr. S. had been present when Mr. Logan and I saw blood issuing from the excoriated parts of the tumour, I suppose he would have thought the hæmorrhage before amputation as good a proof of the organization of the mass, as an injection after the operation.

As Mr. S. seems disposed to deny the existence of the fungus hæmatodes, as a disease sui generis, I rather wonder that he takes no notice of Mr. Burn's dissertation on *Spongoid Inflammation*. This disease agrees in so many particulars with the fungus hæmatodes, that I am inclined to consider them as one, though Mr. B.'s description does not intirely coincide with my own. He mentions the enlargement of the lymphatic glands as a common occurrence in the disease, and as rendering the amputation of an extremity unsuccessful, unless performed at an early period. Whereas in five cases of the fungus hæmatodes on the extremities, in which amputation was performed after the disease had subsisted a considerable time, no enlargement of the lymphatic glands was perceived, nor did any sub-

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sequent affection of these glands render the operation abortive.

As the fungus hæmatodes is often formed under circumstances which exclude the idea of a spurious aneurysm; so also is it distinguishable from a cancerous affection.

This usually, I might perhaps say always, begins with some degree of schirrous hardness in the part affected. Such induration takes place not only where the glands are the seat of the disorder, but also in cancerous affections of the viscera and common integuments. The uterus first becomes schirrous, and the vagina is beset with tubercles before ulceration commences. Whereas the fungus hæmatodes feels soft, spongy, and elastic, though unequally so. While it remains covered with the common integuments, it often gives the sensation in some parts, when handled, as if some fluid lay deep seated within it, while other parts feel as if there was a thickening of the common coverings of the body.

When a cancerous tumour becomes ulcerated, it throws out an excrescence somewhat resembling the head of a cauliflower. But I have seen the fungus hæmatadoes burst through the skin without the slightest induration of the surrounding integuments. The fungus did not then appear like a cancerous excrescence, but rose with a dark coloured surface somewhat resembling coagulated blood, yet apt to bleed freely.

The fungus which repeatedly arose in Mrs. Storr's breast (see Case 4.) after the wound had been cicatrized, or filled with good granulations, had not at all the cancerous aspect. It was soft, of a greasy consistence, and was not surrounded with an indurated margin.

Such cases as that of Ann Wood, (Case 10.) bear the greatest resemblance to cancer; but they differ in their origin, and in the texture of the mass, when divided after amputation, which shews nothing schirrous, but resembles the brain in consistence; and with respect to its colour, has a variegated appearance.

The case of Mr. Ward (Case 6.), to which I have already referred, shews a manifest difference both from spurious aneurysm and cancer.—But I will not enlarge on this subject—The cases and observations which I have already published are faithful copies from nature; and a little time will, I doubt not, convince the judicious practitioner, that there is a disease, of a peculiar nature, to which I have given the name of FUNGUS HÆMATADOES, which has not been received into the list of diseases by the most eminent nosologists.

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nosologists. A disease which proves certainly fatal when left to itself, and for the cure of which no remedy has been hitherto discovered except amputation of the limb, when it has happened to be seated on one of the extremities of the body.*

Leeds,
Jan. 27, 1804.

I am, &c.
WILLIAM HEY.

Abstract of a Memoir on the Febrifuge Principle of Cinchona, by Cit. Seguin.

THE object proposed to himself by the author in the task he undertook was, to point out the means of knowing with certainty the true febrifuge principle of cinchona; to distinguish the species that contain it from those that do not; and, lastly, to appreciate its quantity and quality.

Hitherto the sight and taste have been the only tests of the presumable qualities of the Peruvian bark of the shops; but as these have no precise standard, and are inapplicable to powdered bark, they very imperfectly indicate the presence of the febrifuge principle. It was of importance, therefore, to substitute to these means, little better than illusory, others not only capable of calculation, but likewise invariable. Chemical re-agents alone can answer these ends.

In consequence, Cit. Seguin began by isolating the respective properties of all medicinal substances, and he examined the action they exert on all other chemical substances.

These researches led him to develope very decisive characteristics in the febrifuge principle of cinchona, which place it in a perfectly distinct class. The following are its characters.

It precipitates the solution of tan, but not the solutions of gelatine and sulphate of iron.

When cinchona has not all these characters, it is a proof that it is mixed with something else, or that it does not contain the febrifuge principle.

* Under some favourable circumstances a tumour of this kind might probably be extirpated from some other part, if an opportunity was afforded before the fungus had sunk deep, and formed pouches in the surrounding soft parts.

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The author has subjected to this analysis all the known species of cinchona, found among all the druggists and apothecaries of Paris and Versailles, and constantly obtained the same results.

Unfortunately, these researches have shown, that but an infinitely small quantity of good, unmixed cinchona, is to be procured in the shops; the greater part being either destitute of the febrifuge principle, or mixed, or of a very inferior quality, though containing no mixture.

These results are of so much the greater importance, because the effects of different kinds of cinchona, in fevers, are only in proportion to the greater or less quantity of the febrifuge principle they contain; and those which contain none, as well as all the substances that may be mixed with them, are more or less injurious to the system.

The experiments of Cit. Seguin on the febrifuge principle of cinchona, having convinced him that most of the bark found in the shops was injurious or inefficacious, because it was spoiled by keeping, adulterated by mixture, or deprived of the febrifuge principle; he has endeavoured to obtain a febrifuge principle always the same, more efficacious, more certain in its effects, more capable of assimilation with our sysem, and so cheap, that there could be no temptation to adulterate it.

To attain this important object, the author has inquired what the true cause of fevers, as of their effects, is; what the nature of the febrifuge principle of cinchona, and what its action on our system. He has subjected to the action of the re-agents pointed out for the febrifuge principle of cinchona, all chemical and medicinal substances; and assured himself, whether such of these substances, as might contain the febrifuge principle, did not contain, at the same time, other substances prejudicial to the animal economy. Lastly, he had to cure fevers by the help of these remedies, and then confirm this theory by repeated experiments. Such is the course Cit. Seguin has pursued.

The new febrifuge principle, which he proposes to substitute instead of cinchona, because it unites all the advantages of the bark, without any of its inconveniences, is gelatine in its pure state.

Considered in a medical, economical, and political view, gelatine promises much greater advantages than bark, in its application to the cure of fevers. It occasions no irritation; procures quiet sleep and gentle perspiration; keeps the belly open, without producing cholic or nausea; has no unpleasant flavour; restores the strength, and is digest-

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ed even by the weakest stomach, that would reject the bark as soon as administered.

On the other hand, cinchona irritates the system, disturbs the sleep, has a disagreeable taste, frequently occasions costiveness, and is very indigestible.

In an economical view, there is still greater difference between cinchona and gelatine; the price of the latter being to that of the former, at most, as one to thirty-two.

Lastly, gelatine is indigenous, cinchona is not; and the purchase of the latter requires us to send abroad a very considerable sum of money, which might be kept at home by adopting the use of gelatine.

To this memoir the author has subjoined thirty-seven cases, in which he performed a cure with gelatine, under the eyes of some respectable physicians, and he has desired a Committee to be appointed, to repeat his experiments, and report upon them.

Accordingly, Citizen Portal, Desessarts, Hallé, Fourcroy, Berthollet, and Deyeux, have been nominated for this purpose. Their experiments are made at the School of Medicine, in a room exclusively appropriated to these inquiries; already a great number of patients have been cured; and the Committee will soon make their first report on these cases.

The Case of the Abbe Mann.

THE following case of severe Gout, successfully treated, has excited much attention on the Continent; and from the respectability of the channel through which it has been received, we cannot doubt the fidelity or accuracy of the relation. Our readers will perceive the language of the humoral pathology, which still prevails on the Continent, and some theoretical opinions which are obsolete here; but we did not think ourselves justified in any alteration.

Some have doubted whether this was a case of simple genuine gout; our readers will exercise their own judgments on this subject, and no doubt all will agree that the sufferings of the patient were uncommonly severe; and the success of the remedies was so complete, as to entitle them to farther trials in similar affections.

To

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To the Editors of the Esprit des Journaux.

Gentlemen, *Brussels, Dec.* 31, 1803.

The very extraordinary change in the state of my health, which I have experienced within a few years, has induced many of my friends, who have witnessed it, earnestly to request me to prepare the following statement of the means by which this improvement has been produced. Having been advised by them, and by several medical practitioners, to communicate it to the public, in the hope that others, suffering under the complaint with which I was so long afflicted, may derive some benefit from the communication, I must beg, if you should entertain the same opinion, that it may be inserted in your Journal.

I have the honour, &c. &c.

The Abbe Mann, Canon of Courtray, &c.

Account of a remarkable Case of inveterate Gout, cured by a long Exhibition of Extract of Hemlock, and of Aconite or Monkshood, prepared according to the Prescription of M. Storck.

The Abbé Mann had been accustomed, in his youth, to a life of great personal activity. At a very early age, he had acquired a decided taste for study, and after passing through the usual course of education, continued to devote, to scientific pursuits, every interval of leisure of which he could avail himself amidst the duties of his profession, and during long and frequent marches. This predilection for study, and the love of solitude which it naturally inspired, determined him, at the age of twenty-five years, to leave Spain, and to quit the army, with a view to enter into a Carthusian Order in Flanders.

In 1763, in the twenty-ninth year of his age, he was affected with arthritic pains, which, at times, were somewhat acute, and continued for several months, without his being able distinctly to ascertain their cause. The pains in the feet were not so considerable as to prevent him from walking; but he was scarcely ever entirely free from them, either during the winter of 1763 and 1764, or in the following spring. About this time he was nominated Prior to the Carthusian Monastery at Nieuport. A few days afterwards, he became seriously indisposed with a continued fever, which was shortly succeeded by a regular fit of the gout in both feet. The fever continuing with some degree of violence, his physician improperly directed him to be bled no less than three times. This mode of treatment

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produced an effect, which might easily have been foreseen. The gout was removed from the feet; but the patient experienced nausea, faintness, and sickness, of which he never felt any thing while the gout was confined to the extremities. This indisposition continued six weeks, and the Abbé recovered his health with great difficulty, and very slowly.

During the remainder of the year 1764, and in the spring of 1765, he had several slight fits of the gout. They sometimes affected the feet, but, for the most part, were fluctuating and irregular.

The duties of his profession, and his private affairs, rendering it necessary for him, after his recovery, to take continual exercise, either on horseback or on foot, his constitution became so considerably strengthened, that, during a space of two years and a half, he had no return of the gout, and experienced no serious illness of any description.

Before entering on any detailed account of the remedy to which the Abbé had recourse, it may not be improper to point out, in a few words, the most apparent predisposing causes of his very arthritic constitution. According to *his best judgment*, they appeared to him to be the following.

1. From the year 1756 to 1764, he studied with intense application, seldom less than thirteen or fourteen hours daily; returning to this arduous employment immediately after his repasts, and frequently trespassing on the time which Nature has destined for repose.

2. After entering into the Carthusian Order, he had few opportunities of taking exercise.

3. The difference between the climate of Spain and that of the Flemish coast, and the extreme cold to which he was exposed in the winter season; being daily employed at church four or five hours, and often more, beside three hours at least during the night. Circumstances of this description could not fail of materially injuring the constitution.

4. The privation of that repose which Nature requires, especially after his appointment in 1764 to Superior of the Order. His rest was frequently limited to three or four hours, after one o'clock in the morning. In 1769, the very feeble state of his health compelled him, however, to change this practice.

5. Indefatigable application to study, prosecuted with as much and often more ardour at night, than during the day.

In the opinion of the Abbé Mann, these are the principal circumstances which rendered his constitution so susceptibly

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ceptibly arthritic, that, from the autumn of 1768 to the summer of 1779, he annually experienced two, three, or four attacks of this excruciating complaint. He may venture to assert, with the greatest truth, that, during this long interval, he has seldom enjoyed for more than three or four months in the year, a moderate degree of health, unaccompanied with pain, arising from regular or irregular symptoms of this disorder. A short account of some of the most severe attacks, with which he has been afflicted, will more distinctly explain the circumstances of his case.

In the month of September, 1768, he was attacked with the gout in the stomach, which continued a fortnight, with the ordinary symptoms of nausea, sickness, &c. &c. The disorder afterwards affected his chest and lungs, and occasioned much difficulty in respiration. His physician ordered that he should be twice bled in the feet; but this, for some time, only aggravated the complaint.

In January, 1770, he was obliged to proceed, on private affairs, to Brussels and Molines. The season was extremely severe, and he felt the symptoms of an approaching fit of the gout. The pain which he endured during the journey, was inexpressibly acute; especially in the stomach and the kidnies. Upon this occasion, he was afflicted with the gravel, which afterwards accompanied every attack of this complaint. It was with great difficulty, and inconceivable pain, that he returned to Nieuport, after an absence of three weeks.

His physician directed cataplasms to be applied, which fixed the gout in his feet and right hand, where it continued, with the regular symptoms, four or five weeks. The cataplasm, applied to the left ancle, drew the arthritic humours so powerfully to that part, that they pierced the skin above the inner bandage, and continued in a state of discharge for several months, producing in the left leg a degree of weakness, of which the Abbé is still sensible. In March, and at a time that he thought the fit had left him, the gout returned; attacking the viscera, the stomach and the kidnies. This paroxysm returned every eight or ten days, till April 22, when it was accompanied with the most violent and acute pains, excruciating nervous affections, and continual vomiting after taking medicine, food, &c. In this alarming state, in which his life was almost despaired of, he remained during four days and three nights, without an instant of repose. It is utterly impossible to convey an adequate idea of the agony which he endured. He had several relapses before the end of May, and

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and the frequent vomiting continued more than a twelvemonth afterwards. During the nine years the Abbé was afflicted with the gout, he was constantly subject, as will appear in the sequel, to indigestion and the most violent heart-burn.

In the two following years, he had several fits of the gout, for the most part regular, which affected the feet and hands, but were not accompanied with excessive pain. The right hand, and the right and left foot, were always first, and successively, attacked; and lastly, though seldom, the left hand. These paroxysms generally continued three or four weeks. But, at the beginning of 1772, he had a fit which lasted twice as long; affecting, at the same time, both feet and the right hand, and producing the most acute pain. This was one of the most violent regular fits of the gout which the Abbé ever experienced.

At the commencement of the summer of 1772, finding himself constantly in a state of fluctuating debility, and subject to continual indigestion, heart-burn, and violent sickness, he was advised by several of his friends, to have recourse to the regimen prescribed in Dr. Cadogan's treatise on the gout; a work which had acquired in London some degree of reputation. This regimen consists chiefly in taking exercise in the open air, avoiding every species of fermented liquor, and food that has a tendency in digestion to produce acidity. The Abbé was persuaded to try this mode of cure; and, notwithstanding the feeble and relaxed state of his stomach, continued the practice of drinking water for four months, and observed all the injunctions of the regimen, as far as the circumstances of his health would permit. During this interval, he twice felt the symptoms of an approaching fit, which even continued for a few days, and afterwards entirely disappeared, without producing any regular attack of this disorder. In the mean time he was reduced to a state of great debility, in which he continued till the end of September, when he was attacked with the gout in the viscera, accompanied with the most alarming symptoms. This dreadful fit, the most violent and dangerous which he ever experienced, continued through the winter till April 1773; a period of about seven months. It should be observed, that in 1770, the gout attacked the Abbé in the stomach and the abdomen. This fit was of a different description, for it affected the stomach, the chest, and the head.

The symptoms, which frequently recurred, of this latter species of arthritic attack, were, nausea, sickness at the stomach,

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stomach, and faintness. After remaining some hours in this state, the respiration became gradually impeded to so great a degree, as, at times, entirely to cease; renewing itself at intervals. He afterwards felt a suffocation and strangling, as if the neck was closely compressed with a bandage. This was succeeded by a sensation of a cold humour propelled towards the head, which successively affected the eyes, the ears, and the tongue. The latter swelled so considerably, that it entirely filled the mouth, and lost its muscular motion. Thus deprived of sight and of speech, he could only hear those who were near him, as if they were speaking at a distance. He entirely lost the power of motion, except in the fingers of the left hand, and almost ceased to have any external sensation. *His presence of mind, however, was not in the least affected.* In these circumstances, the strongest cataplasms, and afterwards, blisters, were applied to the feet. In order to recover him from this lethargic state, which, it was supposed, might produce either apoplexy or arthritic paralysis, the physicians ordered him to be shaken with some degree of violence, and the soles of his feet to be rubbed, although excoriated with the cataplasms and blisters. So long as he continued in this state of lethargy, or rather of privation of almost all external feeling, he was scarcely sensible of any impression from the violence of these operations. But, in proportion as he revived, these parts became affected with inexpressibly acute and shooting pains. In the space of about two months, he experienced above twenty attacks of this description; the shortest of which continued about eight hours, and the longest about eighteen. Upon more than one occasion, the physicians conceived him to be on the point of dissolution, and even expressed this opinion. The 1st of September it was supposed that he could not survive the night. A few doses of diaphoretic antimony (antimonium calcinatum) occasioned a sort of crisis, and produced a copious perspiration, which continued an hour, and probably saved his life, by thus promoting a discharge of arthritic humours. He was however, reduced to a state of extreme weakness. In the intervals of these internal attacks, the gout violently affected the feet, the legs as far as the knees, and the right hand and arm. The acute pains and nervous affections, which he endured, exceed all description. Nor did he suffer much less from arthritic colic and the gravel; and the humours which he discharged by vomiting were scarcely less acid than nitrous spirit.

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In this afflicting situation, the Abbé remained during a great part of the time from September to December 1772. For three months afterwards, he had occasional fits of the gout; but they were considerably less violent, and did not affect the intestines. After this, he recovered his health gradually, but very slowly. During the space of two years, however, he felt, on the right side, from head to foot, a species of oppression and numbness, which evidently arose from this part having been frequently attacked with so many violent fits of this disorder; but, in time, these symptoms also disappeared.

In order to prevent the return of the gout, he was advised to have recourse to issues; and, in the autumn of 1773, he had an issue opened under each knee. Either from the effect which they produced, or from some other circumstance, the fits which he afterwards experienced became much less violent and dangerous, than those with which he had been attacked in 1770 and 1772. From this period to the year 1777, he had annually three or four fits of the gout, in the feet and the hands; but they were always more or less irregular, and accompanied with sickness at the stomach, nausea, and other symptoms, which indicated an arthritic affection of the intestines. These attacks generally continued three or four weeks, and were regularly succeeded by the gravel, which lasted a month or six weeks, attended with most acute pain, and a considerable discharge of red sand in the urinary secretions. When free from the gout and the gravel, he enjoyed but a moderate degree of health during three or four months of the spring and the summer. The remainder of the year, he suffered under a languishing and fluctuating debility, which terminated in the painful symptoms of an irregular arthritic affection, that seemed to attack the whole frame.

In the summer of 1777, the Abbé changed both his religious order and his residence. The late Empress-Queen had solicited, and obtained, from the Pope, the secularization of the Carthusian Order, which she afterwards established at Brussels. It might be supposed, that a change of climate, and a total change in diet, and in the mode of living, would have produced a material improvement in the state of his health. On the contrary, during the two following years, he was as much as ever afflicted with the gout, and its consequences. He was always either infirm, or attacked as formerly, with regular fits of this complaint.—Indigestion, heart-burn, and incapability of walking, or taking exercise, increased instead of diminishing.—

Half

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Half an hour's exercise fatigued and exhausted him so much, as to endanger bringing on fainting fits. Every one advised him to take exercise, as the only remedy for his disorder; but he was entirely incapable of attempting it, from the stiffness of his joints, and his extreme weakness.

In this state he remained till the autumn of 1778, when he felt the predisposing symptoms of a violent arthritic attack. He was affected with the gout in the beginning of November. It extended to the viscera, the stomach, and the head, with symptoms and effects similar to those already described as accompanying the fit in October 1772. He continued some days in this state; the fit becoming afterwards more severe, it was judged proper to apply blisters to the calf of the legs. They had the good effect of drawing the arthritic humours from the intestines, and produced a partial discharge. But the Abbé remained long extremely faint, and in a very weak condition; and repeatedly experienced slight fits, after a few days interval, till the following spring. The capability of walking, or of taking any exercise, became more than ever enfeebled, and his powers of digestion so very weak, that all his food was converted into acrimony, and produced continual vomiting, sometimes even blood. His constitution had long been extremely relaxed; but this relaxation, since the last fit, was more considerably increased than ever. The diet he was obliged to observe, while in a state of convalescence, and during Lent in 1779, contributed without doubt to produce this effect. It may be farther remarked, that this excessive relaxation occasioned also a nervous affection, which he had never before experienced; at least, not, by any means, in so violent a degree. The whole nervous system seemed to be attacked by the acrid humours of the gout, producing spasms, nervous affections, and dreadful irritation. If the Abbé experienced more acute pain, in the severe fits with which he was afflicted in 1770 and 1772, than in the present, yet, what he then endured will admit of no comparison with the agony occasioned by this nervous irritation; for it affected the mind as much as the body, and rendered life itself insupportable.

Such was the condition to which the Abbé Mann was reduced in the spring of 1779; disgusted with physic and physicians, and entertaining but little hope, and even little desire, of a prolongation of life; which, in fact, was become a state of perpetual suffering. His situation interested in his favour a number of very respectable persons, who

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who induced M. Himmelbaur, a surgeon on the Staff of the Imperial Army, to visit him in the character of a Friend and Physician, and gradually to acquire his confidence. In this object, he succeeded towards the end of spring, and persuaded him to a total change of diet; prescribing, at the same time, medicines of a mild and sedative quality. After some time, the Abbé proposed to this skilful practitioner, the internal exhibition of hemlock, which he considered merely as a sedative. M. Himmelbaur approved of the proposition, and declared it to have been his wish to try this remedy, but that he had felt some difficulty in proposing it. He added, that, in his opinion, extract of hemlock was not only a sedative, but a powerful corrector of acridity of the humours, and well adapted to strengthen the powers of digestion. In consequence of this resolution, the Abbé began, in April, 1779, to take the extract of hemlock, prepared at Vienna in the manner prescribed by Baron Storck; to which M. Himmelbaur, some time after, added a just proportion of extract of aconite, or wolfsbane, prepared also at Vienna, according to the formula of the same celebrated Physician. From this place, the Abbé always procured these medicinal extracts. They were exhibited in the form of pills, containing each two grains.

He began by taking, three times a day, four pills of extract of hemlock. In proportion as he became accustomed to them, he increased the dose, taking at the same time a pill of extract of aconite. In five or six months, he had gradually augmented the daily dose to 100 and 120 grains; observing, however, the proportion of five or six pills of hemlock to one of aconite.

In these quantities he continues to take them, but in much smaller doses than during the two first years, when he was constantly exposed to arthritic affections. He afterwards added to the pills the following mixture prescribed by M. Himmelbaur.* Take of camphor, mucilage of gum Arabic, and sugar, each one drachm. Let them be well mixed, and add half a drachm of purified nitre, half an ounce of white wine vinegar, and six ounces of syrup of red poppies. He also took occasionally a dose of rhubarb. These are the only medicines which the Abbé has made use of during the last four years, confining, how-

* R. Camphoræ, mucilag. g. Arabici et sacchari, singulorum ʒj. bene tritis et mixtis, addē nitr. potassæ ʒß. acid. acetos. ʒß. syrup. papav. errat. ʒvj. M. fiat mixtura.

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ever, his regimen to nutritious food of easy digestion.—The following are the effects which resulted from this mode of treatment.

During the first three months, the hemlock produced no perceptible effect; he began even to despair of deriving any benefit from it. But M. Himmelbaur incessantly exhorted him to continue taking it, with an addition of extract of aconite. He followed this advice, and in a short time the stiffness of his joints was materially removed, and his capability of taking exercise considerably increased. The spasms and nervous affections began sensibly to diminish. Encouraged by this success, he zealously prosecuted this mode of treatment, and before the winter, he exhibited these extracts in the largest doses. His digestion became stronger, and the acrimonious humours in the stomach, with which he had been so many years afflicted, proportionately decreased. Great progress towards a cure was thus effected. During the winter of 1779 and 1780, the Abbé frequently suspected an approaching fit of this disorder. The winter, however, elapsed without any return of the gout, and, in the ensuing spring, he was able to walk with ease, his joints having acquired strength, and their stiffness being gradually removed. He availed himself of this improvement in his health to take more exercise, which he continued, without interruption, both in winter and in summer. But the most remarkable circumstance attending this mode of treatment relates to the powers of digestion. He now suffered but little from heart-burn and indigestion, though formerly he was perpetually subject to them. If, accidentally, he experienced any inconvenience from acrimonious attacks, a few pills of hemlock or of aconite immediately removed them, and in a more effectual manner than magnesia, or any other absorbent, without any of the consequences which magnesia usually produced.

During the winter of 1780 and 1781, he felt several symptoms of the gout, but without experiencing any fit whatever. Since that time every symptom of the complaint has entirely disappeared. His health is so far re-established, and daily acquires such an accession of strength, that he is no longer affected with heart-burn, indigestion, nervous attacks, or any symptoms of this description. He is capable of walking eight or ten miles, without resting himself, and without feeling any inconvenience from the exertion. It may be proper to observe, that

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that his corpulency is considerably reduced by the effect of these solvent remedies, as well as by exercise.

Another circumstance proves how much the constitution of the Abbé has been strengthened by a long exhibition of the remedies already described. During sixteen years, he had been subject to a chronic complaint, accompanied with almost every species of acrimony; but he had never been in the least affected with any bilious disorder. He has since, however, been obliged to have recourse to the juice of lemons, as a remedy for this complaint. The intense heat of the summer of 1782, and a diarrhœa, with which he was four times attacked in the months of July and August, and which he stopped by astringent and constipating diet, instead of employing aperient medicines, produced a bilious inflammatory fever. This fever relieved itself, in a great degree, by an erysipelas in the left leg; and the bile was no sooner evacuated, than the Abbé was obliged to resort to extract of hemlock and aconite, in order to correct the heart-burn occasioned by this indisposition.

The medicines produced their full effect, and his health is now more firmly re-established.

The Abbé Mann has thus faithfully recited an incontestable fact; the practical conclusions which may be inferred from it, he leaves to the judgment of others.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I AM induced to trouble you with the following remarks on a peculiar plan of treatment of Croup, from a hope, that through the publicity and extensive circulation of your valuable Journal, a remedy which promises considerable success, and which does not appear to have been hitherto known or appreciated in proportion to its merits, may be brought before the medical public, with a view to ascertain and establish its apparently intrinsic worth. The exhibition of calomel, as a curative means in Croup, is not new; but its use appears to have been confined to individuals, or particular places. Mr. James Anderson, sen. of Edinburgh, was, I believe, the first who publicly noticed it, in a paper on the subject in Dr. Duncan's Annals of

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Medicine for 1799. He exhibited it on the authority of a physician of eminence, who had heard of its efficacy in this disease in America; and in four cases he states, it appears to have been decidedly beneficial. The utility of it he further confirms in a subsequent paper in the abovementioned work for 1801, where he also mentions his having found it requisite to administer it more liberally in urgent cases.

Mr. Rumsey, a surgeon in Buckinghamshire, has inserted in a work, entitled, "Transactions of the London Society for improving Medicine and Surgery," an ingenious paper on Croup, in which several cases are related, successfully treated by calomel; he ingenuously owns, however, that in two instances which occurred to his brother, it was given without good effect; but its failure of success in these, if treated with a proportionate quantity of mercury to that given by Mr. Rumsey, I should be much disposed to attribute to the insufficiency of the dose, and the too long intervals suffered to elapse between each exhibition. In two confirmed cases, to be noticed hereafter, much larger quantities of the medicine were given; and after considering the rapid progress of inflammation in the trachea here, the increase of danger from every delay in the use of the most active remedies, and the large quantity of mercury that children will bear without producing any sensible effect, I cannot help thinking its use might be safely extended. Dr. Cheyne, in Essay 1, (on Croup) of his splendid work on the diseases of children, observes, that "it has been proposed to give children calomel under this disease, throwing it in quickly with a view to produce salivation—that he had ordered it in the second stage but never found it of any service." In most of those cases I have heard of being cured by it, no degree of ptyalism was brought on, nor any obvious effect, except that of powerfully debilitating, and producing the singular phenomenon of dark green stools, the appearance of which has by some been regarded as the criterion for desisting from the further use of the remedy. Several interesting cases of cynanche trachealis, successfully treated by this plan, were related at the meetings of the Lyceum Medicum Londinense during the last session, by Mr. Robinson, an ingenious practitioner then in the army; and his evidence in favour of this medicine was corroborated by an obliging letter from Dr. Hamilton of Edinburgh, who had also exhibited it with great success. Mr. Thomas, of Leicester Square, a gentleman of known science and abilities, also

mentioned

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mentioned a case, at one of the present meetings of the Lyceum, which had just occurred to him, and in which he had effected a cure by the free use of the same medicine: To a child of 12 months old, six grains of calomel were at first given, and repeated in four hours, and two grains every two hours after, till thirty grains had been taken; when the peculiar appearance in the stools was produced, the medicine was desisted from, and the child recovered.

I shall now beg leave to conclude this paper, already I fear too long, with the narration of a well marked case which has recently fallen under my own observation, and which I attended for Mr. Newby of Poland Street, who was at that time confined in consequence of a domestic calamity. A robust child of seventeen months old, was attacked with cough, cold, and fever, which were quickly succeeded with symptoms of croup. The friends of the child, not aware of the insidious nature of the disease, deferred applying for advice till after a lapse of two days, when I found it labouring under pyrexial symptoms, quickened and laborious breathing with a highly flushed countenance; but what immediately struck me was the peculiar shrill noise accompanying each inspiration, and the rough stridulous cough which so unequivocally characterize the cynanche trachealis. The pulse was frequent and full; bowels regular. Five grains of calomel were ordered to be given immediately in a little thick syrup, and two grains every two hours after till some obvious alteration should take place, and in addition to these four leeches to be applied to the sternum. In the evening I found my little patient evidently relieved; eleven grains of calomel had been given with very little effect on the bowels; respiration was more moderate and natural; cough less urgent; the force and frequency of arterial action much diminished, and the face not so florid. The calomel was ordered to be continued in doses of two grains every two hours as before, unless excessive purging should be induced, and a blister to be applied to the breast. Next morning I found so great an abatement of all the symptoms, as to be able to pronounce the child out of immediate danger; twelve grains more of calomel had been given, and had produced several loose stools, some of which were of a dark green colour, and contained a number of films like threads of coagulated lymph; the inordinate action of the heart and lungs had now subsided, and nothing but a croupy cough remained. On inquiring if any portions of a membrane had been coughed up, the mother of the child informed

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me she had twice observed its mouth covered with a large white skin after a fit of coughing, but before she could succeed in her attempts to extricate it with a spoon handle the child had swallowed it. With a view to detach any portions of the membrane that might be left, I advised a smart emetic, but notwithstanding nearly one scruple of ipecac. and four grains of tartarized antimony were given at short intervals, little vomiting was produced, and that without any appearance of skins. From this time the remains of the complaint made a gradual retrocession, and the child recovered.

No. 48, Poland Street, Feb. 10, 1804.

I am, &c.
CHARLES N. WAWN.

PROF. TILESIUS'S REMARKS ON HERPETIC ERUPTIONS, PART I. *Translated from the Paradoxien of* Dr. F. H. MARTENS, *Leipsig*, 1802; *by* T. M. WINTERBOTTOM, M.D. *South Shields; and abridged by* THOS. BATEMAN, M.D. *Physician to the Public Dispensary in Carey Street.*

[With an Engraving.]

AFTER having collected the histories of cutaneous diseases, which occurred in his practice during a period of several years, Dr. Tilesius observed that cases of the *herpetic* eruptions were the most numerous; and he was induced to publish his observations in consequence of the confusion which prevails among writers on this subject. He accords with Dr. Willan in the remark, that this confusion has arisen from considering the same disease as different in its nature, and designing it by different names, when its appearance was merely modified by, 1. Difference of situation. 2. By the degrees of violence; or, 3. By the period of its duration; and he adduces several examples to corroborate this remark. The two important sections which follow, treat of the generic character of herpes, and the division and description of the species.

Generic Character of Herpes.

The true *herpetic* eruption has hitherto, even by late writers, had various generic names assigned to it, and has been arranged under all the following genera, viz. Lichen, (Willan, Plenck.) Impetigo, (Vogel, Lommius, Plenck.) Psora, (Lommius.) Strophulus, (Willan; Strophulus, Volaticus.)

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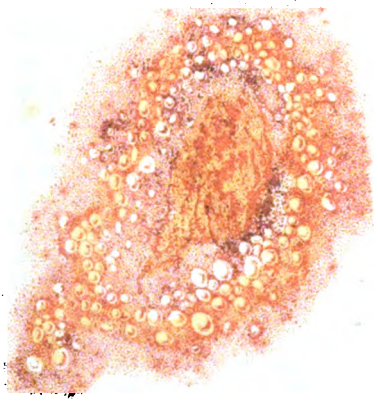

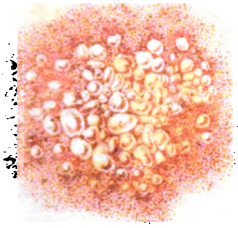

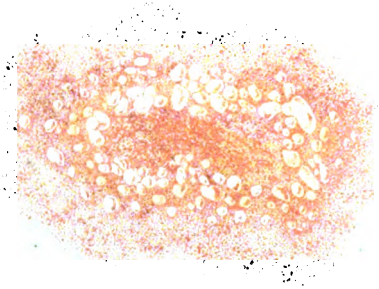

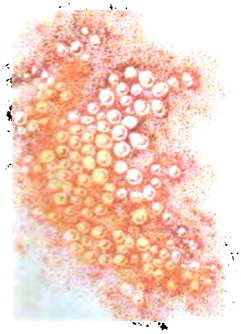

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flaticus. And even under Scabies, (Ludwig, and others, who merely looked to the cure.) To the causes which have given occasion to this confusion, so well pointed out by Willan, I shall add, that the basis, or broad, inflamed area of this eruption, has never been examined with the microscope; otherwise it would have been seen, that the small pimpled herpes presents to the armed eye the same form as the miliary eruption and pemphigus do to the naked eye; and that the general character of herpes is a circular, oval, or even irregular, itchy, inflamed, and somewhat elevated basis, upon which the congregated, and often confluent pimples (papulæ gregales) spring up. Sauvages (Cl. i. Ord. 2) is tolerably accurate. Some of the moist kinds of herpes acquire small, yellow crusts, produced by the saline, glutinous fluid oozing from the pimples when burst; these project like solitary rough points from the area, and produce the characteristic rough surface. It was probably only these incrusted points which Sauvages has termed "crustaceas"; for, except these, no crusts appear upon herpetic eruptions; only branny scales, in which the area, or inflamed basis, commonly desquamates. Sometimes the basis appears wrinkled, when the epidermis has been so much stretched and elevated during the inflammatory period, that subsequently, when it collapses, it lies in long folds, until it be sufficiently dry to exfoliate. Moreover, the acute sense of burning and itching, which continues even after the period of inflammation, is characteristic of this genus. Sauvages says very justly, "Papulæ pejores, corrosivæ, congestæ, aream circularem constituunt, acutè pungentem, valdè pruriginosam." Finally, all herpetic eruptions terminate in a regular desquamation.

It must be observed, that the desquammation of the cuticle is not affected in all diseases in precisely the same manner. It is sometimes separated in the form of scales, sometimes of bran, sometimes of meal or farina, and in some cases in that of foliola or flakes; always in a determinate form, according to the nature of the disease. Hence the importance of microscopical observations, in order to ascertain with accuracy the nature of the disease. Herpes and scabies agree in this, that their pimples break, and fall off in *branny* frustula epidermidis. The *area* of herpes however distinguishes it from itch, in which the pustules are solitary, and spread over every part.

Do pimples or papulæ, which Plenck, Sauvages, and other good Nosologists include in the generic character of herpes, and even consider as a principal appearance, exist

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in all herpetic eruptions? This is a question which Sennertus and Cullen (Phlyctenæ vel ulcuscula plurima, gregalia, serpentia, dysepuleta,) might have answered, if they had perused their works. Agreeably to my own observations, I must answer it in the negative. For I have frequently seen a real herpes, without papulæ, that is, a local eruption of small congregated vesicles (phlyctenæ,) placed upon a somewhat elevated, broad, inflamed basis. This eruption is figured in the plate, (fig. 1) and described under the name of bladder herpes (blasenflechte). It is much larger than the miliary herpes (hirseflechte) which has been described by Sennertus as vesicular, "Constat ex hydatidibus, seu vesiculis, granum milii æquantibus;" and hence its vesicles can be less easily mistaken than those of the miliaria, or considered as papulæ or pimples. Nosologists, however, have given very different definitions of papulæ, Sauvages has classed them with pustulæ, phlyctenæ, and vari, among the rashes, (efflorescentiæ). Plenck says, "papulæ are small hard tumours, which either disperse, or discharge out of their apices a fluid, and then scale away. They differ from pustules in not suppurating, and from vesicles in containing no watery fluid. They appear to be seated in the glands of the skin." Willan understands by papulæ, a very small and pointed elevation of the epidermis, with an inflamed basis, which contains no fluid, and does not suppurate, whose continuance is uncertain, and which mostly terminates by a branny desquamation. All these definitions, however, are ambiguous, because they rest upon no anatomico-pathological examination.

The reason why phlyctis or vesicula is transparent, and on the contrary papula is hard and opake, is to be deduced from the organs by which these eruptions are formed. The first is merely a separation or elevation of the cuticle from the rete mucosum, and is occasioned by an effusion and collection of acrid lymph. In the latter, the acrid lymph, stagnating in the skin and adipose membrane, imitates the cutaneous glands, and forces them, covered with the rete mucosum, upwards to the surface. Consequently a phlyctis is a lymphatic elevation of the transparent epidermis alone; but a pimple (papula) is a slighter elevation of the epidermis, together with the rete mucosum. To be convinced of the justness of this explanation it is only necessary to open a phlyctis, in herpes vesiculosus, erysipelas, or zona, and compare it by means of a microscope, or even by the feel of the fingers, with a papula laid open in a patient affected with

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with itch, with lichen, or who has gruta, vari, or fonthi on the face.

Both of these kinds of eruption appear among the examples of herpes, but do not constitute its character. Independently of them, the flat, elevated, and broad area beforementioned, upon which the papulæ or vesiculæ of herpes are collected, suffice to characterize the genus herpes; for there is no other genus among the various eruptions in which this peculiar appearance is observable. Hence herpes is most easily distinguished from all other eruptions.

Herpes invariably retains its characteristic distinction, it seldom mixes or is complicated with other eruptions, and never changes into other genera. "Ex aeri veneno degenerante herpeticum oriri, non minus, quam pomorum e semine prunos expectare, absurdum videtur." Frank de Cur. Hom. Morbis.) What Wichman says of eruptive poisons in general, is particularly applicable to herpes. "I have no idea of the degeneration of an exanthematous poison or virus; it may alter in some respects, assume a different form, and produce different effects, according as it attacks this or that part of the body; but it can no more degenerate or change into another kind, than a vegetable. It always continues to be a modification of the same virus, and requires only a little diagnostic skill to discover it. Syphilis affords a particular illustration; if it be not totally eradicated, it may perhaps be deposited upon a glandular part, produce hardness and congestion there, but not scrophula; and it will yield to no other than to its specific remedy. Such is the case with herpes, itch, &c. which change into each other as little as measles change into small-pox, or as the cow-pock changes into variola, and vice versâ. But one virus may be complicated with another kind, and so on."

Whether the complication of herpes with other kinds of virus be a rare occurrence or not, we are certain that it has been combined with erysipelas, and this *mixed* eruption has been called by Poupart, dartre erysipelateuse. This author distinguishes it from the other species, by its larger and more extensive inflamed base (area); and by the pimples or rather vesicles (blāschen), from which there oozes a thick, glutinous, saline, and almost purulent fluid, and which appear at first close and congregated in the midst of the area, and accompanied with great heat and violent itching.

A similar combination takes place in the venereal herpes, which generally appears on the upper and inner parts of the

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the thigh, the scrotum, and inguinal regions; in women, on the pudenda, mons veneris, papilla of the breasts. It is distinguished by very small, dry, reddish-yellow papula, which spring up upon a bluish red, inflamed base, (area) and are sometimes circumscribed by a sharp edge. Those who are affected with this eruption, have commonly been liable to herpes, before they were attacked by lues; and though the herpes has been somewhat changed by the accession of the syphilitic virus, it cannot be cured without mercury. Herpetic patients are no more secure from the effects of venereal virus, than patients affected with the itch. But it is remarkable, that herpes, in every possible mixture of lues, &c.) still retains its generic character, the area, and branny desquamation.

Many good practitioners seem to know this distinctive character; although it is often lost sight of, by making an unnecessary distinction between lichen and herpes. Wichman seems to have distinguished the herpetic pimple very well from other isolated pimples, by contrasting the crusta lactea and serpiginosa; but though he seems to comprehend it, he has not given the characteristic of herpes. He considers the more extensive basis of the inflammation, (or area,) the more violent itching, and the more intense redness, as also the congregated papulæ miliares of the one, opposed to the isolated ulcers, and pale red margins of the other, as affording a generic distinction. But it is the red spot, basis, or area, which distinguishes herpes from all other eruptions. Its progress is in this manner: Upon this red spot, which rises more or less above the surface, a number of pimples or vesicles appear closely crouded together, and which, upon the slightest touch on their summits, feel as if pricked with needles; at this time the itchy irritation has reached its acmè, and the first stage is completed. From the last or desquamating stage, in which the epidermis falls off, as far as the area reaches, in mealy or branny scales, the second characteristic of herpes is deduced.

Division and Description of the Species.

I. Division. Vesicular.

By vesicular herpes I understand those kinds, in which the *area* is somewhat redder, less elevated, and of greater circumference; and which, in the first stage, do not break out in pimples, or papulæ, but in vesicles, phlyctenæ. From the violent heat and itching, the vesicles are commonly broken by scratching on their first appearance; and then an

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an acrid lymph oozes out from their summits, which in the second stage forms a small yellow crust; so that the whole surface of the area becomes rough as a grater, or like the cutis anserina. As soon as the vesicles have poured out their contents, the cuticle forms rugæ in the whole extent of the area, and falls off in branny scales, which are larger than those which occur in the *papular* species.

I have hitherto had an opportunity of observing only three species of *vesicular* herpes. 1. The large transparent bladder-herpes, glass or porcelain-herpes, (herpes phlyctænoides. 2. The erysipelatous or confluent herpes, (h. erysipelatosus.) And 3. The miliary herpes, (h. miliaris.) These three kinds are sufficiently distinguished from each other by their external appearance, as well as by their intrinsic character, causes, and method of cure; but agree in the characteristics which have been pointed out. Area purpureo-rubescens, vesiculis corymbosis efflorescens. Willan, from his classing the different species of herpes under his Fourth Order (Bulla Vesicula) seems to know no other kind but the vesicular; but in his descriptions we here and there find an instance of herpes under lichen; and in his plates, under strophulus.

A. *Herpes Phlyctænoides*, Porcelaine Herpes. (Fig. 1.) I have twice had an opportunity of observing this eruption in young men, who had changed their residence and mode of life. Once I observed it in a girl, where it appeared as a critical excretion of a suppressed skin disease, or as a metastical eruption. The last time it appeared in rather smaller vesicles, which were regularly circular, or hemispherical. The patient was sixteen years of age, and had been affected with itch about half a year before this eruption appeared. The itch was suppressed by frictions with mercurial ointment, *which had occasioned* a tertian fever, and a retention of the menses. The patient was carried to a public hospital, where she had taken remedies for three weeks when I saw her; these consisted at first of evacuants and antimonials, and, after the fever abated, of gentle emmenagogues and the warm bath. After she had used the bath about ten times, this herpetic eruption appeared, after a dull pain in the body, on the right lumbar region; and at the same time the menses returned. All internal uneasiness ceased, and the appetite became good. The herpes on the second day extended upwards as far as the sixth rib on the right side, and under the right breast.

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The areas were in general not smaller than a sixpence, and not larger than half-a-crown, very much inflamed and itching: none of them more distant from each other than a finger's breadth, and it was not more than half a day before vesicles were formed. The vesicles stood close to each other; most of them were of the size of a lentil, and reddish; at top white, shining, and pointed: few of them equalled a small pea in size. On the following day the vesicles had become glassy, pearl-coloured, and transparent; on the third day, those which had not been scratched nor burst, became wrinkled and collapsed; from some of them there oozed a viscid lymph, which formed a yellow crusty top. The epidermis of the area, which, in the inflammatory period, was elevated above the surrounding skin, became wrinkled about the fifth day, turned pale, and on the eighth fell off in branny scales, and sometimes even in large leaves. The area continued red, and appeared as if covered with white meal, and was circumscribed with a sharp margin: it itched five or six days longer, whilst the redness continued. When the lowest patch, near the mons veneris, was healed; the superior ones beneath the breast were in a state of inflammation. No application was made to the eruption except a little fresh expressed oil, which the patient was allowed to apply, to allay the itching.

The herpes of the two young men was much milder; but filled with larger and more irregular vesicles. They were both students from the country. It is supposed, and not unjustly, that most foreigners who drink the water here in Leipsic, get the itch or some other eruption; it happened to me, and to most of my countrymen: but perhaps the sedentary habits, mode of life, &c. of students, may have contributed towards it.

The first of these young men was a Swiss, aged 24, of a melancholico-phlegmatic temperament and a lax fibre. He had previously been accustomed to air, exercise, and wine daily; here he drank water, ate a quantity of truffles, cheese, and smoked flesh; was sedentery and studious. The eruption appeared near the lower part of the spine, and consisted of two inflamed areas of a purple red colour, between three and four inches long, and from one to two inches broad. These were thickly covered with large and small irregularly formed vesicles, which itched and burned so violently, that the patient could not bear his clothes to touch them. The vesicles were from the size of a millet seed to that of a barley corn or small bean; they

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were often curved obtusely triangular, and confluent, but had the glassy appearance, and resembled in their origin, progress, and other appearances, those of the girl. My patient was ordered to change his mode of living, to use gentle exercise in the open air, by which means the complaint was removed in three weeks.

The second person who suffered from this complaint was a law-student from Mühlhausen, a very industrious and regular young man of twenty years of age. He had had symptoms of dyspepsia; sat close in his study; but, except drinking water constantly, had committed no errors in diet. I ordered him the solnble tartar and fumaria, alternated with gentle laxatives, regular exercise, and free air. After a short journey on foot all his dyspeptic complaints disappeared. But this vesicular herpes arose in the left hypochondriac region: in eight days it had scarcely increased above three inches, and disappeared without either internal or external remedies: The Fig. I. was drawn from this eruption, which exactly agreed in every point with the two former. The specific distinction of this from other herpetic species, is its large transparent vesicles, with a true glassy lustre (glas-glanz), and resembling porcelain knobs. It ranks among the mild kinds of herpes. Retz, who refers all skin diseases to a plethora biliosa, has also given this a place.

B. *Herpes Erysipelatosus* — Fr. Dartre Erysipelateuse. H. pustulosus of Plenck. Sauvages. Spec. 4. (See Fig. II.) This species is distinguished from the former by its broader area diffused over a larger surface, and consisting of a cinnabar-coloured, burning, erysipelatous inflammation; which disappears gradually; is not circumscribed by a defined margin, and extends far beyond the few vesicles which are commonly placed in the middle of the area. The vesicles are preceded two or three days by the area, in the form of an itching, hot, erysipelatous patch. The largest vesicles occupy the central part, and commonly contain a yellowish acrid lymph; the smaller ones stand nearer the margin, and sometimes contain a purulent matter, and have a yellowish red point on their summits. The vesicles are smaller than in the former species, less elevated, and less transparent; have more of a *fatty* appearance, are less regular, and not so much crowded together. The smaller marginal vesicles form small crusts upon the apices, which makes the area in the second stage rough. Eschars or large crusts, as some pretend, I have never observed;

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served; the larger central vesicles form no crusts on their tops, but become pale and fall into wrinkles until the elevated cuticle dries and falls off in small patches. This species of herpes is of the moist kind, slower and more obstinate in its progress than the former, but by no means so malignant as to have it classed with Sauvages (Spec. 4.) among the spreading kind (H. estromenos of Galen. H. exedens vel depascens of Turner. Spec. 4). It is distinguished from the erysipelas bullosum by its area, which the last wants, and by the congregated small bullæ, which in the erysipelas are larger and more distinct. It is also much more itchy than the pure erysipelas, which never terminates by a branny desquamation. Fever never accompanies it, as sometimes happens in the erysip. bullosum. It is commonly seated upon the exposed parts of the breast and arms, often also upon the neck. It is peculiar to females.

In private practice this eruption has occurred to me only once, when I treated it merely internally. It was of the benign kind, and radically cured in 12 days. The patient was a young woman, who had been frequently troubled with erysipelas in the face, and since her childhood had been subject to lichenous eruptions on her neck and chin. She had now been much heated by washing, and, whilst perspiring, suddenly exposed herself to a piercing north wind in January; this eruption immediately appeared in her neck; in three days it proceeded as far as her right ear, and formed six distinct red herpetic spots, which touched each other, and threw out the above described bullæ in their centres. Two of these patches were extremely painful, and by the constant oozing of a sharp corrosive lymph, became excoriated and bloody. One of these is represented at B. (See plate, fig. 2.)

I have seen this species three times in hospitals, where it was always more tedious and obstinate. Upon the foot of a woman thirty-two years of age, it had continued three months; the patient had been treated, as I was informed, with fumitory, sarsaparilla, dulcamara, cicuta, antimony, and corrosive sublimate. In one case, the internal and external use of vitriolic acid was said to have been useful. My patient took every morning a gentle aperient, after which she drank an infusion of the flowers of verbascum. At night, when warm in bed, she took about 60 drops of liver of sulphur in a cup of a gentle diaphoretic infusion. In order to sooth the burning itching pain, she was allowed to apply externally only the ungt. de uvis.

C. *Herpes*

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C. *Herpes Miliaris*, Sennert. lib. 5. c. 17.—Dartre miliare, Poupart, vid. Plenck, spec. 5. Turner, Sauvages. (Plate, fig. 3.) This is the most malignant and obstinate of all the vesicular species: it is not so rare as the two former species, and attacks men, women, and children; it affects the arms and legs, neck, head, breast, and abdomen. It appears at first in an insignificant form, viz. in small vesicles like millet seeds, of a pale red colour, and pointed, with very pale apices (A. Fig. III). These are situated upon an elevated area, moderately inflamed when compared with the erysipelatous herpes, but itching violently. In the second stage the vesicles become more crowded, and the burning and itching of the area increase, (B). The pimples or vesicles soon burst, or are broken by scratching; a saline glutinous fluid oozes out, which increases the redness and heat; the cuticle is eroded by it, and the herpes spreads. When the inflammation of the area is violent, the vesicles are sometimes filled with a purulent matter, which has a yellow appearance seen through the transparent tips of the vesicles; but I have also seen them watery, and quite empty, hard and almost papulous. I have never observed fever in this complaint. When it has existed for a length of time, the inflamed surfaces touch each other, and become confluent, so that a single area is no longer to be distinguished. The whole surface or basis is red, becomes eroded in the middle, and excoriated by the constant oozing out of an acrid lymph; it is also full of bloody chinks or furrows, surrounded by a fresh margin of miliary eruptions. Of this I have given a representation in Fig. III. C.

No kind of herpes in general bears to be covered without uneasiness; the dry kinds are irritated by the friction of the shirt and clothes, and the itching is thus increased. Heat also produces the same effect. The moist kinds are likewise troublesome, by sticking to the linen as soon as they burst, which being again torn away on using motion, the cutis is left naked. This is especially the case with the H. miliaris, in which the rete mucosum is thus laid bare, and the small vessels of the skin, being torn, pour out blood. To prevent this, the eruption should be anointed with simple ointment, which will also assuage the pungent itching. Some physicians imagine that this species is communicated by infection, e. g. by means of linen, barber's razors, towels, &c. I cannot speak from experience on this point. It is certain, however, that this kind of herpes is for the most part accompanied by evident marks

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marks of depraved fluids, which gives the physician much trouble; for when he supposes the eruption removed, it returns again, and fresh vesicles often spring up on an area which has already had two successive crops. This is particularly the case in scrophulous and scorbutic subjects. This kind of herpes does not appear to be hereditary: it arises frequently after a suppression of the hæmorrhoidal or menstrual discharges. In general it shews a striking connection with the periodical discharge in women; e. g. it appears only at the beginning of this period, or disappears during that time, or on its cessation from age; or it vanishes during the period of pregnancy, and re-appears after delivery. Dirty people, and natives of warm countries who eat much oil and fish, are peculiarly liable to this eruption. It occurs particularly in moist and marshy countries, in spring and autumn. Many internal diseases excite it; and many others arise in consequence of its being suppressed by cold, frictions with mercurial or saturnine ointment, &c.

The remedies to be employed for the cure of this eruption must be different, according to the causes which have produced it. If it be occasioned by a cachectic state of the fluids, it must be remedied by a change in the mode of living, and by medicines which purify the blood. If it arise from metastasis, it must be healed with liver of sulphur, sulph. aurat. antimony, warm bathing, and evacuants. If it be connected with suppression of the hæmorrhoids, menses, &c. these discharges must first be restored. Some consider a metastasis of gouty matter as a cause of herpes: others, that it is a peculiar herpetic acrimony, for which corros. sublimate is the antidote. In hospitals I have once seen this eruption treated according to Smyth's plan, internally and externally with cantharides: another time according to Thilenius, internally with dulcamara, rad. lapathi, and fumaria, and externally with elm bark. Constantini has speedily cured it with a salve composed of litharge, lap. calamin. ol. oliv. and acetum, with which the area was covered twice a day, at the same time the perspiration was kept up by a warm infusion of elder flowers; others have had success with belladonna and rhubarb. The Portuguese cure it by the external use of lemon juice, and the leaves and flower-cups of the cistus ladaniferus; and internally with a powder of the burnt ossa sepiæ, calomel, and crude antimony, whilst at the same time caldas, or sulphur water, or aqua de S. Miguel is drank.*

* The *papulous* herpes, together with an account of the general mode of cure, will appear in a future number of the Paradoxica.

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IT is my endeavour to observe as a regulating maxim in my conduct, *Fac nihil per iracundiam*; nor shall my anger even be inordinately excited by the renewed and unprovoked attack of "*Constant Reader*,"* envenomed as it is with Horatian satire, "*bilious*" acrimony, and disappointed wit.

Such weapons are, in my estimation, never respectable, and when wielded in the clumsy and misdirected manner of your "shrouded" correspondent, are more than pointless.

My refutation of "*Constant Reader's*" mis-statement†, was that which truth required; and the mode in which it was done, had too much of urbanity, either to "*move bile* or justify ridicule.

"Tolle jocos non est jocus esse malignum."

My want of triumph, however, is "*Constant Reader's*" exultation. But why this revengeful satisfaction? Does he regret that the *truth* is discovered? Was he actuated by either a *suggestio falsi* or *suppressio veri*, with respect to the unfounded report. This is indeed a malicious subterfuge, and much too suspicious, to be consistent with the sincere regard he professes for medical improvement, and humanity.

It is admitted that death took place in the case alluded to, but does sudden death never happen but from gouty diathesis? Are not the violent and manifold influence of vascular plenitude, obstruction, rupture, and convulsive actions, occurring in the vital organs, sufficient to account for sudden death, without gratuitously referring to a ghostly something, called *gouty diathesis*? The only diathesis allowable to "*Constant Reader*," on this occasion, is that of revenge, for having been detected in attempting to authenticate a false rumour.

In very few words my vindication shall be restated, from all the reproachful, illiberal, and unmanly insinuations of "*Constant Reader*," relative to my claiming an originality

* See Med. and Phys. Journal, No. 60, p. 150—4. † Ibid. No. 58, p. 500—2.

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in the use of cold water in gout, and then let the public impartially say, what is *offensive cavilling*, and what is an *original* and *honest* endeavour to improve practical medicine. The ground on which cold water, or reduced temperature, was proposed by me as a safe and effectual remedy for gout, was founded on a radical resemblance, which appeared to me to subsist between gouty and every other description of inflammation, that they were also in commencement of local, and not of constitutional origin, and that, by parity of reason, they ought to yield to similar treatment.

That this was my view of the subject, is verified by the following quotation from my former reply to "*Constant Reader*," published in the Medical and Physical Journal.*

"It has never been my object to assume credit for either originality or peculiarity, in reducing the morbid excess of temperature in arthritic affection, by diminished heat. It is impossible the principle should have escaped the earliest reasoning on the subject. The principle of the practice may therefore be rather considered as *common* to human intelligence than *peculiar* to any individual. The doctrine of distempered heat at once pervades and constitutes the most intelligent and instructive parts of Hippocrates's writings. The medical principles and practice of Sydenham also, founded on temperature, formed a transcendant epocha in the history of curative medicine, and happily for mankind, finally overthrew the fatal delusions of humoral pathology, and alexipharmic jargon. Conducted then by analogy, it occurred to me as highly reasonable, that gout, distinguished like other inflammations by excessive heat, and marked by no essential difference, might be subdued in a similar manner. This persuasion induced me to assimilate the treatment. Not a single fact had previously reached my knowledge to authorise the trial; though, undoubtedly, many were extant. To me therefore the practice was relatively, though not absolutely, original. The only claim to originality which seems to exist in my right, and the only one which deserves a moment's solicitude to establish, is that of publicly recommending the practice, after having experienced its salutary effects in numerous instances, in which the treatment was conducted with such disguise and secresy, as were necessary to obviate the prohibitive influence of prevailing prejudices against it."

The

* See Med. and Phys. Journal, No. 51, p. 442—4.

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The shelves of neither ancient nor modern authors offered any thing that suited the object of my inquiry. It would be in vain to search the stores of medical literature for any authority to countenance my principle, that gout is exclusively an inflammatory affection of the ligamentous and tendinous structure, that it is merely local,* and unknown as a constitutional complaint, but through the medium of morbid sympathies, generated and rendered more or less inveterate by its protracted duration. The originality professed by me was, that of decidedly recommending the practice to public adoption; not because it merely afforded alleviation to pain, but because such alleviation of pain was justified by the nature of the disease in being a local and not a constitutional affection. My claim to the refrigerant treatment of gouty inflammation is not rested on so baseless a pretence, as that of having been the first casually to have subjected to trial the topical use of cold water, but on the sure foundation of having justified, applied, and realised its indisputable safety and efficacy by a theory † which undauntedly aspires to be at once perfectly original and rational.

The opinion which has been hitherto held of gout, must have ever opposed an insuperable obstacle to a scientific adoption of reduced temperature for its cure, however glaring its incidental efficacy might have appeared, or however strongly recommended. The establishment of the remedy therefore was impossible, without the originality which is in my full (it may be presumed indisputable) right, that of considering gout as a *local* affection, wholly independent *of constitutional* origin.

Neither my medical reading nor conversation had furnished the smallest clue to forming my opinion, which led me so far to neglect what had generally been written on gout, as to have overlooked all and every of "those *splendid authorities* quoted by "*Constant Reader*" for the topical use of cold water in that disease. These quotations are totally useless and quite irrelevant to the purpose for which they are adduced. They say no more than may be attested by the experience of many hundred individuals, that gouty pain may be subdued by the external application of cold water to the affected part, but with an *avowed*

[* We think this opinion will meet with general opposition. Ed.]

† Fully given in a Dissertation, on the eve of being published, by the Author of this Reply.

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dread of the remedy being worse than the disease. Hence the ground of "*Constant Reader*" triumphantly exclaiming, it has been often tried, and as often abandoned. Why has it been abandoned, if it has ever really been abandoned? Because its safety had not the warranty of my doctrine, for its general, confident, and permanent adoption.

Plagiarism is my detestation, literary robbery has a deep shade of moral turpitude; nor are the epithets "arrogant" and "*assuming*" to be deemed just or fair from a "*shrouded*" and vindictive assailant.

If to claim a right which cannot be disproved, is arrogance and assumption, then are these *gentle terms* applicable to the immortal Harvey and Jenner. Opponents were not wanting to dispute the discovery of the circulation of the blood with the former; nor have wranglers been remiss in endeavouring to garble the exclusive right of the latter to the establishment of vaccine inoculation. It was not sufficient to invalidate or even disparage the exploring merit of Harvey, that others had preceded him in imagining that the blood flowed in a circular course; nor was the public value of vaccine inoculation at all diminished in favour of Jenner's originality, by others having previously, but privately and incidentally, inoculated. Such desultory procedure was useless, and must have ever remained so, without doctrinal, systematic, and explanatory aid, to demonstrate its practical worth, and to insure its public adoption.

If, agreeably to "*Constant Reader's*" opinion of my want of originality in the refrigerant treatment of gout, the reputed efficacy of cold water, or reduced temperature, had remained on the authority of those who had recommended it, but who had not examined the nature of the disease sufficiently to perceive its perfect safety, and to entitle it to public acceptance, in what state would have been the practice at this moment? Would a gouty patient have immersed the affected limb in cold water oftener, or with more confidence, than the vaccine inoculation would have been substituted for the variolous, had the preventive efficacy of the former remained unpromulgated and unestablished by its able advocate? It may be objected the parallel does not hold. As it respects comparative originality, it does most perfectly. As it regards utility, time only can determine the question; but the probationary period which has already elapsed, since the commencement

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ment of my investigation of the subject, promises fully to establish the parallel also in point of utility.

If immediate relief, without the slightest inconvenience to the general health, ascribable to early cure, can entitle reduced temperature to be considered as an infallibly efficacious remedy for gout, hundreds can already attest its irresistible claim to that character; and in spite of "*shrouded*," or *unshrouded* opposition, its salutary influence will progressively gain increasing confidence, and soon prove the nature and degree of my right to originality, in scientifically authorising and establishing the topical use of reduced heat in gouty inflammation.

I now take my leave, in turn, of your "*shrouded*" correspondent, without the smallest dread of his *unshrouded* "*goose quill's*" endeavour to "*throw cold water*" on my book when it shall appear. Indeed, this wonderous witty, this "*goose quill*" threat, savours too much of *goose cackle* to be at all terrific.

Vox, et præterea nihil."

Saying no more of what is past, it may not be deemed uncharitable at parting, to desire "*Constant Reader*" to be extremely cautious in again dabbling in *mis-representation*, and what is *worse*, in being *displeased* at detection. If, after this warning, he should be again caught tripping over the sacred boundary of truth, and that in his "*propria persona*" majesty, he must expect no quarter from me; he will be deservedly consigned to literary infamy, and be for ever proscribed all claim to credit.

Until however this said "*Constant Reader*" shall think proper to quit his lurking hole, and appear in his threatened "*propria persona*," he will be too despicable a combatant for my encounter. When he shall actually skulk from his snarling retreat, he will start as fair game; and it is possible, that the *undisguised* friends of medical improvement in general, and more particularly the numerous votaries to my gouty remedy, will join me in a *hue* and *cry* against this *mighty unshrouding champion*, and laugh to scorn his impatient but malignant design of "*throwing cold water*" on a scientific and humane endeavour to establish the infallible efficacy of that fluid, in promptly and safely curing gouty inflammation.

"Spectatum admissi, risum teneatis amici."

Conscious of the rectitude of my intention, and of my indefeasible claim to that originality, which confers a

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right to discovery, and which alone is worth contending for; also, fully persuaded of the important advantages already rendered to mankind by my doctrine and practice, in gouty affection, my publication on the subject will be ushered into the world without any solicitude as to its fate. Whatever may be its defects, its intrinsic merits promise long, *very long*, to survive the hostile machinations, the daring, but pitiful efforts of prejudice, calumny, malevolence, *mis-representation*, and all the other ignoble passions, whether "*shrouded*" or *unshrouded, oral* or "*goose-quilled*," "*bilious*" or "*jocular*."

"Rusticus expectat dum defluat amnis
"Labitur, et labetur in omne volubilis ævum."

I am, &c.

Taunton, Feb. 5, 1804. ROBERT KINGLAKE.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

FROM the numerous occasions in which I have experienced the effects of metallic preparations in the treatment of intermittent fevers, is founded a tolerable accurate knowledge of the respective advantages which accrue from their individual use, and a comparative estimation between them and the generally affirmed specific qualities of the cinchona.

The white vitriol I have employed in a number of instances for the cure of agues, with very happy success; but I must confess, from an extensive practice and frequent observation, that it does not possess any specific quality, and that not unfrequently it has failed as a remedy, especially in those cases where the constitution had suffered from repeated attacks of the fever.

From repeated trials, I am induced to prefer the sulphat of copper or blue vitriol to either the solution of arsenic, or the white vitriol. The effects of the latter are neither so certain, nor are they sufficiently lasting in inveterate cases, as those derived from the blue vitriol; and although the blue vitriol and the solutio mineralis arsenici seem to induce equivalent success as to the cure of the disease, or seem to be equally efficacious, yet from the use of the copper

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copper preparation, seldom any deleterious tendency ensues, whilst some of the worst consequences originate from the administration of the arsenic solution.

In those constitutions which have been much habituated to agues, I have experienced the entire failure in the cure of the fever, from all three of the aforementioned preparations, and the cure only to be effected by the exhibition of the cinchona. From the great number of men labouring under agues, (when the Guards were in Ireland and in the western part of the country, there were seldom fewer than two hundred affected with intermittents and dysenteries for many months) and the continued prevalence of the causes which induced the fever, it was found practicable and necessary to give every remedy a fair and comparative trial; although the Peruvian bark seldom failed to afford a certain remedy, yet, both on account of the difficulty of procuring sufficient supplies of it, and the desire to avoid unnecessary consumption as also expence, other medicines were resorted to. The white and blue vitriol, and also the arsenic solution, were the medicines generally employed, and were attended with the comparative success before alluded to. Yet in many instances of the more inveterate malady, and especially in those constitutions which had suffered from the disease during the campaign in Holland, one common and general circumstance was remarked, and this was, that the disease, from the use of the above preparations, seemed to become suspended only for a time, it would sooner or later relapse, and its accession observed a period consonant to the original type of the fever, which was mostly tertian, and the relapse generally happened on the ninth day subsequent to the last paroxysm. To avoid these returns of the fever, the Peruvian bark was administered, and, after the use of either of the above preparations, was found of equal success, and effected as certain a cure as when given in other instances from the first invasion of the disease.

I certainly must coincide with Dr. Scott, whose letter in your last Journal has given rise to these observations, that the word *specific* sounds empirical, and is too generally applied; yet as the cinchona is so powerful a remedy for intermittent fever, and mercury for venereal infections, some indulgence must be allowed to those who term them by the denomination of specific. As Dr. S. does not allow those remedies which have the most claim to the title, to possess any specific quality, how can he suppose or infer, because specifics are so prevalent and fashionable, that the

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profession of physic is nearly at an end? It appears to me that as specifics increase, empiricism will have a proportional increment; and although quackery is daily augmenting, it seems probable that the ratio will be inversely to Dr. S's calculation, and that where there springs up one empiric there will be at least two medical officers or physicians. It gives me some satisfaction to observe, that Dr. S. prefers the cuprum ammon.* in agues, as it comes very near my own practice; large doses of ammonia I have frequently added to the medicines before noticed, and with great success.

I am, &c.

Blackfriar's Road, Feb. 15, 1804. C. TICE, M. D.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

BEING of opinion that your conduct, as Editors of so interesting a work as the Medical and Physical Journal, cannot be influenced either by favour or partiality; I beg you will act as liberally towards me, as you have done to Dr. Scott, in allowing me to reply to his Strictures on my Observations relative to the Efficacy of Zincum Vitriolatum in the Cure of Agues.

The word specific seems to have made a serious impression on the Doctor; he remarks, specifics are so fashionable, that the profession of a physician is nearly at an end, —A little farther on, he says, the word specific I very much dislike, to me the sound is *empirical*; and I can assure him, to me his observation appears extremely harsh and unbecoming; if any part of my paper savored of quackery, his observation must convey, tacitly, censure on the Editors as well as the author; and if the former had been

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* The quantity of white vitriol, as prescribed by Mr. Cuming, I have frequently given to many patients in the day, yet I have found a great variety under its operation, in the constitutions of my patients. Those soldiers who had experienced the severity of the disease at the campaign in Holland, not only could not bear large doses of either of the vitriolic preparations or arsenic solution, but these medicines were mostly fallible in their operations; and in such instances, recourse to the Peruvian bark was indispensable, and which never failed of success.

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been sensible of this, the reproof would have been just. But it remains with me to exculpate both them and myself, from an imputation as gross as it is indecent; and the Doctor should recollect that few nostrum-mongers are fond of exposing their practice in print. The Doctor may take my word for it, if he chooses, that the remarks made in my paper of No. 58, are the result of unerring observation and experience.

I have to request my reader will do me the favor to refer to that part of my paper, which proved so very objectionable to the mind's eye of the Doctor, and he will there find, if he judges liberally, from the manner in which I made use of the word specific, that it does not convey the idea of its being an infallible remedy; no man, whose judgment is not grossly perverted, could for a moment suppose so. I do not assert that the Doctor laboured under such an infirmity; no, I would judge more charitably, and suppose it arose from inattention to the subject. It will be easily perceived that I do not wish to give bark more credit than experience teaches me it deserves. What person conversant with medicine has not heard it remarked, that bark was a specific in agues? And medical authors tell you, that such a quantity will be requisite to cure an intermittent of such a type, whether quotidian, tertian, or quartan; but when exceptions are made to data well established, for the purpose of getting certain things undeservingly into disrepute, such conduct must in some degree be considered fastidious. I speak here only as far as relates to the word specific, for if lexicographers were of the opinion the Doctor is, the word would be expunged from the English language; when this happens the author need not be afraid of the critic, for then, in all probability, it will be forgotten.

I think with the Doctor, that few medicines can be honoured with such an epithet, but surely one may merit it more than another; and so long as the word is retained in our language, there can be little harm in observing that one medicine is entitled to it more than another, when it cures what the other could not; and this is the only meaning I intended the word to convey, which I trust every impartial person will readily perceive, and think with me that the word empirical borders on severity.

The Doctor acknowledges, though somewhat reluctantly, that he has a good opinion of white vitriol in the cure of agues, for he observes it answered the intention *pretty well*,

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Surely if it cured when other remedies failed, a better word than *pretty* might have been used; but he says, "I thought cuprum ammoniacum a better medicine," which I believe has been expunged from some Pharmacopœias, being considered by men eminent in their profession, a remedy fraught with the greatest danger; and I cannot find it in the Edinburgh Dispensatory, a book which he has quoted respecting white vitriol. He appears to recommend zincum calcinatum as preferable, and gives a formula for its exhibition in the margin, of *one grain* twice a day. He surely only means this as an auxilliary, from the smallness of the quantity, to be taken in twenty four hours; but I must here observe, under the head of zinci vitriolati purificatio, in the very book which he has quoted, that this medicine is considered preferable to the calx zinci, in cases where its powers are indicated. The compilers of this work do not appear to have known that zincum vitriolatum possessed the virtue of curing agues per se; and if there is any merit in promulgating to the world a remedy which stands high in my opinion, it cannot be the intention of the Doctor to detract from it, by laying in a claim for orginality; a claim which I never presumed to offer: but let Virgil speak for me,

"Haud equidem tali me diguor honore."

And I believe those gentlemen who are willing by experiment to decide whether the calx zinci or zincum vitriolatum deserves the preference, will find the result of their enquiries to be greatly in favour of the latter, though I must acknowledge I never gave the former a trial, or ever deemed it worthy being put in competition with the medicine I still so strenuously recommend.

The Doctor says, his patients could never take the quantity of white vitriol mentioned by me; this is very possible, I have known a small quantity effect a cure; but when trifling doses did not answer the intention, I always pushed it to the length mentioned in my paper, without producing vomition or any bad consequence; if the stomach was ever affected, a little mint water, or any other cordial, always relieved the patient. Every medical gentleman will of course be guided by the feelings of the patient, and his own discretion will tell him when to desist; the road between timidity and rashness is not at all devious, and the former is as much to be deprecated as the latter; humanity shudders at the thought of keeping a patient labouring under the most trivial complaint, longer on the sick list than

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than is necessary, which I believe is often the case when medicines are administered with too sparing a hand.

In replying to Dr. Scott, I kept two objects in view; the first was to refute the opinion which he has attached to the word *specific*, for I must remark the task of writing will be difficult when circumstances render it necesary to give perception as well as matter. The last was for the purpose of exciting the attention of my medical brethren, to a remedy, which, as far as my observation goes, inclines me to suppose, is as much deserving of the epithet specific, in ague, as any other that I am acquainted with.

I am, &c.

Romsey, Hants.
February 10, 1804.

RALPH CUMING.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE maxim, "Veritas est magna et prævalebit," was never more strikingly exemplified, than by that complete victory which the cow-pox has already obtained over every description of its opposers. The ignorance and indolence of some, and the selfishness and prejudice of others, were soon found to be barriers too weak to resist the mighty torrent, which, sweeping away every obstacle before it, has now inundated almost the whole civilized world; and it can scarcely be doubted, but that in time it will hurry the small-pox, with all its dreadful consequences, into the ocean of oblivion. Perhaps there are individuals amongst the more enlightened part of the community, who still resist the evidence in favour of vaccination; but scarcely will a *professional* man be found so destitute of common sense, or so regardless of his reputation, as to attempt to discredit it.

The infallibility of cow-pox, as a preservative against the small-pox, is fully established; and it is hoped, that subsequent experiments will confirm the opinion of those who already believe in its powers over the plague. And whilst we behold its virtue in preventing the accession of one or more diseases, I am not without hope that time and observation will evince its efficacy in *removing* others of an alarming and fatal tendency, and thus entitle it to the character, both of a *prophylactic* and a *therapeutic*.

I am led to this hope by the successful treatment of three cases

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cases of *atrophia* by vaccination within the last year. Dr. Cullen has thus defined this disease, " Marcor et asthenia, sine pyrexia hectica," and makes it the second genus of the order " Marcores," which he describes as " Corporis totius macies." The subjects of these three cases were all under six months old, and I think had that species of the disease which Dr. C. calls " Atrophia (famelicorum) a nutrimento deficiente," and Sauvage " Atrophia lactantium." The emaciation of each was advanced to a very great degree, and they who have been accustomed to see this disease in children will understand me, when I say that the countenance in each was very much like that of a young monkey. The first of these children I vaccinated, without having any other idea than that of preserving it from the small-pox; but I was so struck with the rapid amendment of its general health, immediately after the scabbing process was completed, that I inoculated the other two by way of experiment, and was happy to find the event the same in all three. They are now healthy children, two of them grown plump and fat, and the other daily advancing to the same condition. I inoculated a fourth child, under similar circumstances, but it died before the scabbing process was finished. I was fearful this event would have brought discredit upon the cow-pox, but was happy to find that the parents of the child were convinced that the inoculation had nothing to do with its death, which they were satisfied was occasioned by its former disease. I think that scrophula has much to do with this disease, and that the deficiency of nutriment arises not from a sufficiency of food not being taken into the stomach (for these children were all very hearty) but from a diseased state of the mesenteric glands, which either prevents a due quantity of aliment from passing into the thoracic duct, or by changing the properties of the chyle, renders it unfit for the nourishment of the body. " But how," it may be asked, " can the cow-pox remove a diseased state of the glands?" I answer, " How can the small-pox *excite* a diseased action of them?" Till that difficulty be resolved, I shall content myself with matters of fact, and leave theories and speculations to more ingenious men. I am far from supposing that cow-pox will prove any thing like an infallible remedy against any species of atrophia; but being convinced that it has been of essential service in three cases out of four, I have stated the fact, in order that other practitioners may turn their attention to similar cases when they occur in their practice. It is possible these children might have recovered without vaccination;

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vaccination; but as no other remedy was employed, and as their amendment was *visible* so soon, I cannot but think that the action of cow-pox wrought some important change in their constitutions.

It is to be lamented, that any prejudices still exist amongst the lower class of people against vaccine inoculation, so as to prevent its becoming more general. Perhaps nothing short of an act of the legislature will produce the desired effect. I am aware that I am treading on sacred ground. I know too, that the liberty of the subject is a very tender point, and must only be touched with the gentlest hand. But I am of opinion, that an effective act might be passed without the smallest infringement of any constitutional principles. From repeated experiments, (made with this express view) I know that a *little* money will remove *very great* difficulties. Suppose then an act was passed, obliging the overseers to pay two shillings and sixpence to every person who would produce a certificate from the surgeon, of the vaccine inoculation having been performed; I am persuaded prejudices and objections amongst the poor would soon die away. The sum thus paid should be put into the rates, and would be no great burden. Surgeons in general would inoculate gratis, or the salary of the *town doctor* might be made adequate to his additional trouble. A clause might be inserted prohibiting any *professional* man from inoculating with the small-pox, not making it penal for any other person to do so; by this means the liberty of the subject would be preserved, whilst the means of exercising it to the injury of the public would be in a great measure destroyed.*

I am, &c.

Kidderminster, Feb. 13, 1804. GEORGE CUSTANCE.

Observations on the Crural Hernia, by Dr. Hull.

(Continued from pp. 119—129.)

HAVING pointed out the different methods of dilating and dividing the crural ring, that have been proposed by the principal chirurgical writers of Britain and the Continent of Europe, I shall now proceed to give some directions for performing the whole of the operation for the incarcerated crural hernia, under the various circumstances in which this may be necessary.

I. *Where*

* This opinion of Mr. C. is spreading rapidly. Ed.

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I. *Where the hernia was perfectly reducible, previously to the incarceration, is of small size, and from the shortness of the period the incarceration has existed and the absence of alarming symptoms, there is great reason to believe the displaced bowel or bowels neither gangrenous nor on the point of becoming so.*

A. The taxis and other remedies having been diligently employed without success, the patient is to be placed upon a table of convenient height, or upon a bed; the external incision should be begun an inch or an inch and a half above the hernia, and continued to the same distance below it. This incision should be made in such a direction, as to pass over the middle of the tumour, and to intersect the crural arch at or nearly at right angles, and it should be continued through the skin and cellular membrane, avoiding, as much as possible, the lymphatic glands with which this is often beset.

The lower part of the tendon of the m. obliquus externus and the upper part of the fascia of the thigh being exposed, an incision is to be made with caution through the fascia, the whole length of the tumour.

An attempt may now be made to reduce the displaced parts, and if the reduction cannot be effected by the application of moderate pressure, we should proceed to cut the crural arch.

With this view, a small aperture is to be made through the tendon of the m. obliquus externus, about half an inch above the crural arch, at which the point of a grooved director is to be introduced, and being kept in close contact with the posterior surface of the tendon, passed down to the arch; this portion of tendon is then to be divided upon it by a probe-pointed bistourie with a narrow blade. An assistant is now to draw the spermatic cord upwards with a blunt hook, or bent probe, and the crural arch is to be cautiously divided from before backwards, till it be entirely cut through, or till the crural ring appear to be sufficiently enlarged; and in doing this, the edge of the knife should be turned towards that portion of the linea alba which lies betwixt the umbilicus and symphysis pubis, that the arch may be cut obliquely inwards, near to its insertion in the os pubis.

We have here been supposing that the patient is a male. In operating upon a female, we may either divide the tendon, as directed above, or, omitting this, may immediately divide the crural arch; as the round ligament of the womb

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womb may not be wounded, or, if wounded, no bad consequences may ensue. At least, I have cut through the crural arch in this way, without perceiving any hæmorrhage or other accident from it in the female.

By moderate pressure upon the hernial sac we should now endeavour to return its contents into the abdomen.

If we succeed in this, the wound may be considered as a simple incised wound; its lips are to be brought into close contact, and secured by the interrupted suture and a sufficient number of straps of adhesive plaster. Over these a pledgit of lint spread with cerate and tow is to be applied and retained by a proper bandage. The patient is to be placed in bed with the hips raised as high, or higher than the head, a strict antiphlogistic regimen is to be observed, and saline cathartics are to be employed, &c. &c.

B. If the reduction of the bowel be found impracticable after the division of the crural arch, and the hernia be of long standing, there is reason to suspect a stricture formed by the neck of the sac. To remove this, a small opening is to be made through the sac, either by cutting carefully down through it, and frequently examining with a probe or director, to ascertain when the sac is cut thro'; or by raising a small portion of the sac with a pair of dissecting forceps, and cautiously cutting this horizontally, the side of the knife being turned to the sac. A slender director being introduced at this opening, the neck of the sac is to be divided upon it. Should it be difficult to execute the division of the sac in this way with safety, a probe bent into a semicircle at the point is to be introduced at the opening, and the point being carried beyond the stricture is to be made to press upon the peritonæum, which is to be cut upon the end of the probe. The probe being then pushed through the upper opening, the neck of the sac may be divided upon it without any danger of wounding the contents. If the sac be thick and opake, or dark-coloured, and there be a suspicion that the bowels may adhere to it, Dr. Monro* with great propriety, advises us to make the first opening in the peritonæum above the stricture, then to introduce a probe bent near its point into a semicircle directly downwards through the stricture into the sac, and upon the point to make another small hole; after which we may either cut the intervening portion of the

* Description of all the Bursæ Mucosæ, &c. p. 52.

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the sac upon the probe, or may introduce a furrowed director, and divide the neck of the sac upon it.

The neck of the sac being divided, the intestine or omentum may be returned, provided this has been the seat of the stricture.

C. If the reduction of the bowel should still be prevented, it is to be suspected, that the sac and its contents adhere, and, as the adhesion must be recent and of the spongy kind, it will be proper to lay the sac completely open, to separate the bowel from it by a finger, or probe, and then reduce it.

The wound being now properly cleaned, the edges of the sac are to be laid together and the divided integuments are to be secured in contact by the interrupted suture, &c. taking care not to pass the ligatures through the edges of the sac.

As the method of operating in crural hernia, without opening the sac, is not so generally adopted as it seems to deserve, I shall in this place make a few observations on the advantages arising from this practice, where it is properly applicable, and succeeds as in the case stated above.

Three sources of danger, arising from the operation as performed in the usual way, are avoided. 1st. The peritonæum is not wounded, consequently the danger arising from this cause of inflammation is avoided. 2. Neither the prolapsed parts, nor the internal surface of the peritonæum, are exposed to the air. 3. The danger of wounding the bowels, which is incurred by opening the sac, is completely avoided: and the greatest nicety of the operation, in many cases, consists in opening the sac.

Where the operation is performed without opening the sac, provided the arteria obturatoria is in its natural situation, the danger is confined to the wound of the common integuments and the crural arch, and is scarcely greater in my opinion than that arising from the degree of force commonly employed in the taxis.

This practice appears more particularly applicable to the crural than the inguinal hernia, because the former is almost always of small size, and therefore strictures are less liable to be formed amongst the contents of the sac. Great danger has been apprehended by some writers from returning the serous fluid, effused within the sac, into the abdomen. From this circumstance I should expect no danger, and those who are of a different opinion, must perceive that the danger to be apprehended from this source is very trifling, as the crural hernia is commonly not

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not larger than a walnut and often as small as a hazel nut.

According to Sabatier, both Franco and Paré practised the method of operating in hernia without opening the sac. Mr. Petit practised it before the year 1720, and in his posthumous work has replied to the objections that had been urged against it. The following quotation will show in what cases he deemed this method of operating inadmissible, and that he was well acquainted with the advantages resulting from it in those cases, wherein he had recommended it. " Mon sentiment est donc, qu' excepté les hernies gangréneuses, celles qui sont maronnées & quelques-unes de celles, dans lesquelles l'intestin contient des corps étrangers, toutes les autres peuvent etre traitées ainsi; il y en a même, qu'on ne doit point traiter autrement."

" Qu'on se demande à soi-même quelle utilité il y a d'ouvrir le sac? Je n'en connois aucune, si ce n'est de découvrir l'intestin & l'epiploon, pour remédier à leurs altérations, supposé qu'il y en ait, de le détacher de lui-même & de l'épiploon dans les hernies maronnées, & de pouvoir toucher immédiatement l'intestin, pour faire rentrer les matières fécules endurcies & même les corps étrangers, s'il y en étoit. Or ces trois cas sont ceux, que j' excepte: dans tous les autres, qui sont en bien plus grande nombre, pourquoi ouvrir le sac? Rien ne nous indique de le faire; il est même très avantageux d'eviter cette opération, *parceque l'on n'expose point les parties à l'air; on ne court point risque de les blesser en ouvrant le sac,* & de plus je ferai voir ailleurs, que pour les suites, il est bien plus avantageux, que le sac n'ait souffert aucune solution de continuité. De tout cela, je tire cette consequence, qu'il vaut mieux débrider l'anneau par le dehors, que par le dedans du sac." *Traité des Maladies Chirurgicales,* t. ii. p. 373.

This mode of performing the operation is particularly recommended by Dr. Monro, in his " Description of all the Bursæ Mucosæ," p. 43, &c. who has adopted the opinion and reasoning of Mr. Petit, and confirmed the propriety of these by the relation of different cases. In a Note to p. 57, the Doctor has the following observation. " We will readily perceive, that Mr. Petit did not perceive the chief advantages of the operation he proposed; I mean, that the danger in the common method of operating arises chiefly from the exposure of the bowels to the air; and as this material fact has been little better understood by various authors who have lately written on the

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subject, that method has been rejected by them on as slight foundation as that on which it was proposed by Mr. Petit." But it appears from the above quotation, that Mr. Petit has particularly noticed the advantage of not exposing the parts to the air.

The incarcerated crural hernia is a frequent and dangerous complaint. The danger of the disease, as well as the difficulty of the operation, which is required for its removal, are confessedly increasing every hour. It therefore is the duty of the surgeon, when called in at the commencement of the complaint, to make an immediate and fair trial of the remedies that are most powerful in taking off the strangulation; and where these do not prove successful, to propose the operation without delay. When an operation can be considered by a surgeon, and recommended to a patient, as not attended with much danger, pain, or difficulty, and as affording a very good chance of recovery from a disease extremely dangerous in itself, it will be more likely to be proposed by the one and submitted to by the other at a sufficiently early period to be attended with success. In this point of view the operation in question may, I conceive, very properly be regarded, and may, if generally adopted, be the means of preserving many valuable lives that would otherwise be lost.

II. *Where the hernia was perfectly reducible before the incarceration, but from the long continuance of this and especially from the violence of the symptoms, there is great reason to fear that the prolapsed parts are either gangrenous or tending strongly to gangrene.*

Under these circumstances it would be evidently improper to attempt the reduction of the bowel or bowels, without opening the sac, since these, if mortified, must separate, and may thereby occasion so much mischief in the cavity of the abdomen as to prove fatal. It is therefore necessary to open the sac, and examine the state of its contents, which should be done before the crural ring is divided.

With this view, a small opening is to be made into the sac, in one of the ways mentioned above; and it is in general better to make this near the bottom of the sac. The opening is to be dilated by a probe-pointed bistouri either introduced upon a grooved director or guided by the fingers up to the anterior margin of the crural arch.

A. If the prolapsed viscus, or viscera, though inflamed or discoloured should neither adhere to the sac, nor be affected

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fected with gangrene, there can be no doubt with respect to the propriety of returning it. We have been advised by some writers to pull down an additional portion of bowel into the sac, before we cut the crural arch, as the division of the arch may thus be rendered unnecessary. This attempt, however, should be made with great care, since any material force applied to the bowels, would be productive of more danger than the division of the arch, and would often fail of success; and I consider it as a better general rule, to proceed to the division of the crural arch immediately after we have determined upon reducing the contents of the sac.

B. Should the bowel or bowels adhere to the sac, and not be gangrenous, in all probability the adhesion will be of the spongy kind, formed by a layer of coagulable lymph, either wholly inorganic or but imperfectly organized, and may be detached without the use of the knife, by the means recommended above. In this case, therefore, we may separate the prolapsed parts from the sac, and then reduce them.

C. If the hernia be an Epiplocele, and the displaced portion of omentum be in a gangrenous state, this is to be carefully unfolded, and removed by a pair of scissars. Should any vessel or vessels bleed, these are to be separately secured by ligatures, which should be left of a sufficient length to hang out of the wound, that they may be taken away after they have separated. No ligature, as was formerly practised, should be tied tight round the whole of the protruded omentum.—If the omentum be in a dubious state, or if the limits betwixt the gangrenous and living parts be not well marked, it may be advisable to leave it in the sac.

D. If the hernia be of the intestinal kind, and the prolapsed portion should be merely an appendix, as the appendicula vermiformis, or a preternatural elongation, forming a cul de sac, and gangrenous, this is to be removed by a pair of scissars. The upper portion, if its diameter be considerable, and especially if fæces be discharged from it, should be stitched, before it is returned, in order to prevent the inconvenience and danger arising from the discharge of fæces from the wound, or into the abdomen. The ligatures here also should be left of sufficient length to be withdrawn after their separation.

E. When the hernia is an Enterocele, and the prolapsed portion, constituting a part of the regular alimentary canal,

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is in a gangrenous state, we must proceed differently, according to the extent of the gangrene.

If the gangrene occupy the cæcum, or only a portion of the parietes of the intestine, the posterior or mesenteric part being situated above the stricture, it will be necessary, after opening the sac and dividing the crural arch, to apply the proper dressings; in doing which we are to take care that the wounds of the sac and integuments do not heal by the first intention; that the fæces, discharged through the opening in the intestine, are frequently removed; and that the strength of the patient is supported by nutritious clysters, if a great part of the aliment, taken into the stomach, pass through the wound. In several cases of this kind the aperture in the intestine has gradually diminished and at length entirely healed, and the discharge from the wound has gradually diminished till at length the whole of the fæces have passed by the anus. In other cases, a portion of the fæces continue to be discharged at the groin, the sore remaining fistulous: or the whole of the fæces pass this way, and then the orifice is to be regarded as an artificial anus, and is to be prevented from closing by the introduction of a tent. In instances of this kind it is desirable to know, whether any part of the food taken by the mouth passes through the whole tract of the intestines, and for this purpose currants will be found a very convenient test. These being of small size, and indigestible, will be passed per annus, if not wholly discharged from the opening occasioned by the hernia. By some writers we are advised not to cut the crural arch in these cases, for fear of destroying the adhesion by which the intestine is attached to the parts about the ring: But the mere division of the arch would not, I apprehend, in any instance separate the intestine when it does adhere; and if it should not adhere, the division of the arch would be necessary to enable us to pass a needle and ligature through the mesentery, with the view of fixing the intestine in the wound.

If the whole of the parietes of the prolapsed intestine be affected with gangrene, we should divide the crural arch, and then endeavor to draw down a portion of the sound intestine, connected with each end of the gangrenous part, into the sac. If this should be impracticable, in consequence of adhesions at or above the neck of the sac, the operator can do no more than apply the dressings in such a manner as to admit of the fæces being discharged by the wound. It is scarcely to be expected, that under these circumstances,

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circumstances, the divided extremities of the intestine can unite in such a manner as to restore the continuity of the alimentary canal. In general, if the life of the patient be preserved, it must be by submitting to the inconvenience of an artificial anus.

When a portion of sound intestine, connected with each extremity of the part that is become gangrenous, is pushed down, or can be pulled down, after the crural arch has been cut through, a choice of two modes of proceeding is left to the operator. He may either content himself with establishing an artificial anus, or he may endeavour to unite the sound ends of the intestine, after removing the mortified portion.

To form an artificial anus, it is necessary to secure both the divided extremities in the wound by passing a ligature through the mesentery, and fastening this to the thigh by a piece of adhesive plaster; because we are not able to determine with certainty which end is connected with the upper part of the alimentary canal. After this has been ascertained, by administering oil or currants, it will not be requisite to detain the extremity of the inferior portion of the intestinal canal in the wound any longer. It may therefore be returned into the abdomen, after clearing it by the injection of some warm water, or after stitching up the aperture, if this should appear necessary from any discharge that may take place from it. The discharge of the fæces from the remaining end of the intestine, is then to be provided for by proper dressings, &c.

An artificial anus, with every advantage to be derived from an appropriate apparatus and bandage, proves a constant source of distress from its dirtiness; it is also liable to become extremely painful and even dangerous, in consequence of an inversion and protrusion of the intestine, resembling a common prolapsus ani; and in some cases an anus of this kind proves a cause of dangerous and fatal debility, the food passing off by it, before the chyle has been absorbed in sufficient quantity to answer the purposes of nutrition. This last inconvenience is unavoidable, where the portion of intestinal canal betwixt the stomach and the aperture, constituting the anus, is of short extent. To avoid this source of inconvenience and danger, it has been proposed to stitch the sound extremities of intestine together, after the removal of the gangrenous portion, and in a few instances this has been put in practice with success. With this view the extremity of the superior portion of intestine has been introduced into the extremity of the

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inferior portion, and these have been sewed together without introducing any extraneous substance into the intestine. In other cases, a piece of the trachea of some animal, or a hollow cylinder formed of a piece of card or thin pasteboard, or a piece of a tallow candle of a proper thickness, have been introduced into both extremities of the intestine, before the needle and ligature have been employed to sew them together. An obvious advantage is to be derived from interposing some substance of this kind, before we attempt to stitch the intestine, viz. that we run no risk of sewing the opposite sides of the intestine together, when we only wish to unite the two ends.

F. Another case has occurred, wherein the prolapsed portion of intestine, though not gangrenous, must necessarily be cut off, and treated in one of the ways just described, in order to give the patient a chance for life: namely, where two points of intestine have been so long and so strongly compressed, that an adhesion of different parts of the internal coat has taken place and obliterated the canal. The intestine contained in a herniary sac has frequently been observed to be much contracted in the points where it has sustained the pressure of the ring, but I should suppose it has rarely been rendered impervious from this cause, though it must be regarded as a possible case, and consequently as deserving the attention of the operator. The pervious, or impervious state of the intestine in these points, may upon some occasions be ascertained by pressing, or attempting to press, the contents of the intermediate portion of the intestine through them, or by pulling the parietes gently asunder. Where the canal of the intestine is pervious, we need not hesitate about the reduction, as we may expect the contracted points will gradually recover their natural diameters.

G. If both a portion of omentum and intestine should be found affected by gangrene on opening the herniary sac, the operation is to be conducted according to the directions given above for the management of the cases, wherein these states of the omentum and intestine occur singly.

III. *Where the contents of the sac were irreducible for a considerable time previously to the incarceration, and there is every reason to believe them to be neither gangrenous nor on the point of becoming so.*

A hernia may be rendered irreducible independently of incarceration, from the bulk or change of form of the displaced

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displaced parts, or from the adhesion of these to each other and to the sac.

It rarely happens, I believe, that a crural hernia becomes irreducible merely from the bulk or change of form of the contents of the sac. Where a crural hernia is irreducible, before incarceration takes place, I should be induced to consider this as arising from adhesions, rather than from the bulk, or change of form of the bowels. Adhesions may affect the whole or only a portion of the contents of the sac, and hence the hernia may be wholly irreducible or partially reducible; and adhesions, when partial, may affect the neck of the sac only, or some part at a distance from the neck. Adhesions also differ in their nature, as well as in their extent and situation. Three kinds of adhesion have been described, viz.

1. The *spongy*, in which the parts are slightly glued together by a layer of coagulable lymph, and can easily be separated by the finger, or other blunt body pushed betwixt the adhering parts.

2dly. The *fibrous*, in which slender cords or filaments, of a softer or harder consistence, arise from one part of the contents or sac, and are attached to another.

3dly. The *fleshy* or *tendinous*, in which the parts are united together in such a manner, that they form an almost homogeneous mass, the constituent parts being scarcely, if at all, distinguishable from each other. The *spongy* adhesions are to be expected in herniæ, where the parts have only begun to adhere, after the incarceration has taken place. The *fibrous* and *fleshy* are to be expected, where the irreducible state has preceded the strangulation, and especially the latter, which is the worst kind of adhesion.

From a perusal of the writings of some celebrated surgeons, it would appear to be no difficult matter to separate any adhesions that may be met with betwixt a herniary sac and its contents. That the spongy kind of adhesions may be easily broke thro', I know from experience; and I also know from experience, as well as reading, how extremely embarrassing the fleshy kind of adhesions prove, and that it is impossible in some cases to separate these by dissection, without wounding either the prolapsed bowels or contiguous blood vessels.

A case of incarcerated Bubonocele, in which the hernia was of large size, had existed more than *sixty* years, and during a considerable part of the time had been in an irreducible state, occurred to Dr. Lancaster and myself. After trying the usual remedies, the operation was proposed

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and submitted to. On cutting the sac, which was very firm, thick and opake, we found the contents every where adhering to it, and the whole compacted into a mass, with scarcely any distinction of parts. With great difficulty we dissected the contents from the sac, and by carrying an incision thro' the inguinal ring as high as where the bowels passed out of the abdomen, we succeeded in returning them into the abdomen. No vessel was wounded in the operation, which required tying. Yet there is reason to believe, that the spermatic artery was divided, as the testicle and spermatic cord sloughed, and came away in a few days after the operation. It is remarkable, that, though we could not avoid wounding the omentum and intestine in this operation, the old man recovered without any dangerous symptom, and lived several years, following the occupation of a carpenter. This, I believe, was a case of hernia congenita, as we did not meet with a tunica vaginalis testis distinct from the sac, and the contents of the sac seemed to adhere immediately to the testicle.

Since I met with the above case, I have been of opinion, that the best general rule for performing the operation for an incarcerated crural hernia, that was previously irreducible, will be to divide the crural arch, and not meddle with the sac; unless, from its contracted and indurated state, the neck of the sac should prove or be suspected to be the seat of the stricture; we are in this case to cut through the neck of the sac in the manner laid down above, and may then desist from dividing the sac, if there should appear, from the introduction of a probe, to be any considerable adhesion betwixt the sac and its contents; or we may proceed to divide the sac through its whole length, if there be a prospect of reducing its contents without any material risk of injuring either these or the femoral vessels. As the patient may be deprived of the benefit of wearing a truss after the operation, if the prolapsed parts be not replaced, it is particularly desirable that they should be reduced, if this can be accomplished without increasing the danger. The operator should however recollect, that, from the depth which the crural hernia is situated, and its contiguity to the large femoral vessels, the scalpel cannot be used without great danger, to detach any adhesions betwixt the back part of the herniary sac and its contents.

It may not be improper to mention here, that when an irreducible hernia passes into an incarcerated one, the incarceration may affect only the old prolapsed parts, or an ad-

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additional portion of bowel, which does not adhere either to the sac or its contents, may be forced down into the sac, and become so far compressed as to occasion the symptoms of incarceration. In the latter instance the taxis may be resorted to with some prospect of success; and as we know no method of distinguishing these two cases, it would appear improper to omit it in any instance.

Whether the sac be opened or not, and whether the bowels be returned, or left in their protruded state, it will be proper to endeavour to heal the wound by the first intention, and therefore to bring the divided integuments into contact, and retain them by sutures and strips of adhesive plaster.

IV. *Where the contents of the sac were irreducible before they became incarcerated, and there is reason to believe these are already gangrenous.*

In this case it is not to be expected that an operation can prove of any use unless the sac be opened; therefore, after dividing the crural arch, a small aperture is to be made into the sac, which is afterwards to be continued through its whole length. If the sac and its gangrenous contents be found adhering strongly together, it will be better to leave these to separate, to keep the lips of the wound asunder, and apply the necessary dressings. If the prolapsed parts adhere but slightly to the sac, these may be cut off as near as possible to the sound.

Under these circumstances, if the prolapsed part be merely omentum or an intestinal appendix, the patient may recover perfectly. If the dead prolapsed part be only a portion of the anterior parietes of the intestine, or part of the cæcum, the recovery may also be complete. But, if a larger portion of intestine, and especially if its whole circumference should be grangrenous, we must expect that the patient, if he should recover, will have a fistula or artificial anus in the situation of the hernia.

V. *Where the contents of the herniary sac have been injured by external violence and incarceration, or symptoms resembling those of incarcerated hernia have taken place in consequence of the violence.*

A. If a person with a reducible crural hernia should receive a severe blow upon it, and should immediately have pain, swelling and tension in the part, together with violent sickness and vomiting, the displaced bowels not admitting of reduction by the taxis and remedies usually employed, the operation for the incarcerated crural hernia will

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will be necessary. In this case I should recommend opening the sac, although no symptoms of gangrene were present; because the contents may be so far injured as to render it improper to return them into the abdomen. But if the external injury, though it may have proved the exciting cause of the incarceration, have not been sufficient to immediately affect the texture of the bowels, the opening of the sac may not be necessary.

B. If a patient with an irreducible crural hernia should be exposed to a similar accident, and the same symptoms should immediately arise in consequence of it, and continue notwithstanding the use of the proper internal and external remedies, it would be equally necessary to operate in this case; but I think it would be better to divide the crural arch and leave the sac unopened, if there be reason to believe the contents were not already in a gangrenous state, or merely to divide the neck of the sac when that is suspected to be the seat of the stricture. But if there be reason to suspect the contents of the sac are mortified, this should be opened, since the operation without opening the sac would be of no avail in this case.

Hitherto I have not been consulted in any case of crural hernia, wherein the prolapsed parts had been injured by a severe blow: but I have lately had the care of a patient with a bubonocele, who had suffered from an accident of this kind. These cases prove particularly perplexing from our inability to determine how far the symptoms are occasioned by the injury immediately done to the parts by the contusion, or how far they are the consequence of a stricture induced on the parts, owing to their tumefaction.

At some future period I may publish this case, with some further remarks on Hernia, which want of leisure will not allow me to bring forward at present.

EXPERIMENTS *and* OBSERVATIONS *on* CINCHONA, *tending particularly to shew that it does not contain* GELATINE, *by* ANDREW DUNCAN, M.D. F.R.S.E.

HAVING been long engaged in a series of experiments on the astringent substances employed in medicine, I was particularly interested with "a Memoir on the Febrifuge Principle of Cinchona," lately published. The presence of gelatine in cinchona, was so incompatible with experiments

I had

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I had formerly made, that I was strongly inclined to believe, that Seguin (than whom no one should be better acquainted with the combinations of tannin and gelatine) had been misled, either from having examined cinchona which had been adulterated, or from some other accidental cause. To satisfy myself I immediately proceeded to the unerring test of experiment, which has convinced me that cinchona does *not* contain gelatine, but some other principle not yet sufficiently examined, which agrees with gelatine, in forming with tannin, a precipitate comparatively insoluble in water. At the same time it is but fair to remark, that my experiments were made with the infusion and tincture of cinchona, containing all the soluble principles of that substance, whereas Seguin's observations are said to be derived from the examination of the isolated febrifuge principle, of which he gives the following characters: "It precipitates the solution of tan, but not the solutions of gelatine and sulphate of iron." On the contrary, my experiments teach me, that the entire infusion and tincture of cinchona, precipitate the solution of tan, and also the solution of gelatine slightly, and the solution of sulphate of iron copiously. But as the two last precipitates may be reasonably ascribed to the action of other principles contained in my infusion and tincture of cinchona, I shall not insist upon them, but proceed to shew that, although cinchona actually does precipitate the solution of tan, yet it does not contain gelatine.

Exp. I. 1. An ounce of infusion of galls was saturated, by adding to it in different portions, an ounce and a half of infusion of cinchona. The mixture was white and turbid, with a loose light precipitate.

2. On filtration the fluid passed almost colourless, and perfectly transparent.

3. The precipitate when dried, weighed five grains. It had a yellow colour, and an opake earthy appearance, was extremely friable, and did not adhere to the filtering paper.

4. The filtred fluid gave no further precipitate with solution of cinchona, but with half an ounce of solution of gelatine, containing six grains of gelatine in each ounce, it produced a copious precipitate, and was saturated.

5. The precipitate, when separated by filtration, and dried also, weighed five grains, but was hard and brittle, adhered strongly to the paper, had a yellow colour, and exactly resembled a resin in appearance.

Exp. II.

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Exp. II. 1. An ounce of the same infusion of galls was saturated by an ounce and a half of the same solution of gelatine. Immediately a very copious, whitish, tenacious, and adhesive precipitate was formed.

2. On filtration the fluid passed very slowly; and even after repeated filtration, still retained a slight degree of opaline bluishness.

3. The precipitate when dried, weighed fourteen grains and a half. It had a brownish yellow colour, was transparent, and had a resinous appearance and fracture. It was also hard and brittle, and adhered strongly to the filter. In every particular it resembled the precipitate produced in the former experiment (Exp. I. 1) by gelatine, after the infusion of galls was completely saturated by cinchona.

4. In the filtred liquor (Exp. II. 2) infusion of cinchona produced no change.

Exp. III. To an ounce and a half of the same infusion of cinchona, half an ounce of the solution of gelatine was added. It produced only a slight degree of turbidness, and changed the colour of the infusion from a pale greenish to a reddish yellow colour. When filtred, it passed perfectly transparent, and the bottom of the filter was covered with a red varnish; but it had gained only one grain in weight. In other experiments with larger quantities and stronger infusion of cinchona, the presence of tannin was more strongly indicated.

Exp. IV. Infusion of galls was not affected by rectified spirits of wine, in which isinglass had been long infused.

Exp. V. 1. A tincture of cinchona was prepared by infusing it in the same rectified spirits. After it was filtred some resin was separated by precipitation with water and filtration.

2. With infusion of galls this tincture gave a copious precipitate, exactly resembling that produced by the same reagent and infusion of cinchona. (Exp. I. 3.)

Exp. VI. With tincture of galls the same tincture of cinchona gave no precipitate.

Exp. VII. In the mixed tincture (Exp. VI.) a copious precipitate was produced by diluting it with water.

Exp. VIII. A solution of carbonate of potash produced a copious white flaky precipitate in the solution of gelatine, which was soluble in boiling water, but was not precipitated from the solution by infusion of galls, until some acid was added.

Exp. IX.

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Exp. IX. The solution of carbonate of potash changed the colour of the infusion of cinchona to a fine red, without disturbing its transparency.

These facts seem to me sufficient to prove the difference between gelatine, and the new principle in cinchona, which for the sake of convenience, I shall venture for the present to denominate cinchonin.

Gelatine is soluble in water, and the solution is disposed to gelatinize. Six grains of isinglass, dissolved in one ounce of water, form with it at temperatures below 60° Fahrenheit, a jelly of considerable firmness. From its solution in water, gelatine is precipitated by alcohol, and a solution of carbonate of potash. It is precipitated also by tannin, and the precipitates form a hard brown transparent mass.

Cinchonin is soluble in water, but gives it no tendency to gelatinize. From its solution in water, it is not precipitated by a solution of carbonate of potash. It is soluble in alcohol; it combines with tannin. The compound is soluble in alcohol, but forms, when water is added, or used as a menstruum, a friable opaque yellowish precipitate; but cinchonin does not separate even from a watery solution of tanin, all that is precipitable by a solution of gelatine.

Observations on the Structure of the Tongue, *illustrated by Cases, in which a Portion of that Organ has been removed by Ligature.* By Everard Home, Esq. F.R.S.

Physiological inquiries have ever been considered as deserving attention; and, whenever medical practitioners, in the treatment of diseases, have met with any circumstance, which threw light upon the natural structure or actions of any of the organs of the human body, or those of other animals, their communications have met with a favourable reception.

The following observations derive their real importance from offering a safe and effectual means of removing a portion of the tongue, when that organ has taken on a diseased action, the cure of which is not within the reach of medicine; and as the tongue, like many other glandular structures, is liable to be affected by cancer, it becomes of no small importance that the fact should be generally known

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known. In a physiological view, they tend to show, that the internal structure of the tongue is not of that delicate and sensible nature which, from its being the organ of taste, we should be led to imagine.

The tongue is made up of fasciculi of muscular fibres, with an intermediate substance met with in no other part of the body, and a vast number of small glands; it has large nerves passing through it; and the tip possesses great sensibility, fitting it for the purpose of taste.

Whether the sense of taste is confined entirely to the point of the tongue, and the other parts are made up of muscles fitted for giving it motion; or whether the whole tongue is to be considered as the organ, and the soft matter which pervades its substance, and fills the interstices between the fasiculi of muscular fibres, is to be considered as connected with sensation, has not, I believe, been ascertained.

The tongue, throughout its substance, has always been considered by physiologists as a very delicate organ; and it was believed, that any injury committed upon it would not only produce great local irritation, but also affect, in a violent degree, the general system of the body. This was my own opinion till I met with the following case, the circumstances of which induced me to see this organ in a different point of view.

A gentleman, by an accident which it is unnecessary to describe, had his tongue bitten with great violence. The immediate effect of the injury was great local pain; but it was not attended with much swelling of the tongue itself, nor any other symptom, except that the point of the tongue entirely lost its sensibility, which deprived it of the power of taste: whatever substance the patient eat was equally insipid. This alarmed him very much, and induced him to state to me the circumstances of his case, and request my opinion. I examined the tongue a fortnight after the accident; it had the natural appearance, but the tip was completely insensible, and was like a piece of board in his mouth, rendering the act of eating a very unpleasant operation. I saw him three months afterwards, and it was still in nearly the same state.

From this case it appears, that the tongue itself is not particularly irritable; but the nerves passing through its substance to supply the tip, which forms the organ of taste, are very readily deprived of their natural action; this probably arises from their being softer in texture than nerves in general, and, in that respect, resembling those belonging to the other organs of sense. There

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There was another circumstance in this case which very particularly struck my attention, viz. that a bruise upon the nerves of the tongue, sufficient to deprive them of the power of communicating sensation, was productive of no inflammation or irritation in the nervous trunk, so as to induce spasms, which too commonly occur from injuries to the nerves belonging to voluntary muscles: I am therefore led to believe, that the nerves supplying an organ of sense, are not so liable to such effects as those which belong to the other parts of the body.

The small degree of mischief which was produced, and the readiness with which the nerves had their communication completely cut off, were to me new facts, and encouraged me, in the following case of fungous excrescence from the tongue, which bled so profusely as at times to endanger the patient's life, and never allowed him to arrive at a state of tolerable health, to attempt removing the part by ligature.

John Weymouth, eight years of age, was admitted into St. George's Hospital on the 24th of December, 1800, on account of a fungous excrescence on the right side of the anterior part of the tongue, which extended nearly from the outer edge to the middle line at the tip. It appeared, from the account of his relations, that the origin of this fungus existed at his birth, and had been increasing ever since. He had been a year and a half under the care of the late Mr. Cruikshank, who had removed the excrescence by ligature round its base; but, when the ligature dropped off, a violent hæmorrhage took place, and the excrescence gradually returned. Attempts were made to destroy it by caustic; but hæmorrhagy always followed the separation of the sloughs; so that, after ten trials, this mode was found ineffectual. It was also removed by the knife, ten different times, but always returned.

From this history I was led to believe, that the only mode of removing the disease was taking out the portion of the tongue upon which it grew. This was a case in which I felt myself warranted in making an attempt out of the common line of practice, to give the patient a chance of recovery; and, from the preceding case, having found that pressure on one part of the tongue produced no bad consequences on the other parts, I was led to remove the excrescence in the following manner.

On the 28th of December, I made the boy hold out his tongue, and passed a crooked needle, armed with a double ligature, directly through its substance, immediately beyond the

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the excrescence. The needle was brought out below, leaving the ligatures; one of these was tied very tight before the excrescence, the other equally so beyond it, so that a segment of the tongue was confined between these two ligatures, in which the circulation was completely stopped. The tongue was thin in its substance; and the boy complained of little pain during the operation. Thirty drops of laudanum were given to him immediately after it, and he was put to bed. He fell asleep, continued to dose the greater part of the day, and was so easy the next day as to require no particular attention.

On the fifth day from the operation, the portion of tongue came away with the ligatures, leaving a sloughy surface, which was thrown off on the eleventh day, and succeeded by a similar slough; this separated on the fifteenth day. The excavation after this gradually filled up; and, on the twentieth day, it was completely cicatrized, leaving only a small fissure on that side of the tongue.

Encouraged by the result of this case, I was led to perform a similar operation upon a person at a more advanced period of life.

Margaret Dalton, 40 years of age, was admitted into St. George's hospital, on the 25th of December, 1801, on account of a tumour, the size of a pea, situated on the right side of the tongue, near its edge. The history of the case was as follows. A small pimple appeared, and gradually increased, without pain; the only inconvenience was, that it affected her speech, and, when bruised by the teeth, bled freely.

The operation was performed on the 11th of January, 1802, in exactly the same manner as has been already described. It produced a considerable degree of salivation, which was extremely troublesome (much more so than the pain the ligatures produced), and continued till the slough came away. The ligature nearest the root of the tongue separated on the sixth day; the other on the seventh; and, in three days after the separation of the second ligature, the wound was completely skinned over.

A third case of this kind came under my observation, in which there was a small tumour in the substance of the tongue, about the size of a pea, which gave me the idea of its being of that kind which might terminate in cancer. The patient was a gentleman of about forty-one years of age. Upon examining the tumour, I told him of my alarm respecting its nature; and at the same time added, that I was very ready to remove it, should it be the opinion of

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other practitioners that such a step was adviseable; and my experience in two former cases led me to believe it might be done with safety. I therefore advised him to consult other medical practitioners of reputation, and acquaint me with their opinion. Mr. Cline was consulted, and his opinion coincided with mine; which made the patient decide upon having the tumour removed.

The operation was performed on the 28th of December, 1802. The needle pierced the tongue an inch beyond the tip, a little to the right of the middle line of the tongue; and the space between the two ligatures, when they were tied at the circumference of the tongue, was fully an inch. The tongue was thick; and the mass included by the ligatures was such as to make it difficult to compress it. The operation gave considerable pain, of a numbing kind. Immediately after the operation, the part included became dark coloured, particularly towards the middle line of the tongue. A salivation took place. The next day, the pain and salivation were great, and the patient could not swallow; but, on the day following, he could take broth, negus, and other fluids.

On the sixth day from the operation, the slough became loose; and the least motion of the tongue gave great pain. Upon examining the slough, there was a small spot which looked red, and was surrounded by a dark surface; this was towards the right side. Upon further examination it appeared, that the ligature to the right had not completely deadened the part at the centre, in which the artery had its course. This accounted for the red spot, as well as for the pain the patient suffered; and led me, on the seventh day, to disengage the ligature on the left, (which was almost completely separated) by means of a pair of scissars, and pass another ligature through the grove to the opposite side, and tie it over the part not completely deadened. This gave great pain for a few hours, which was relieved by the use of tincture of opium. On the eighth day, the patient had less pain than on any preceding day, and less salivation; and, on the ninth, the whole slough came away. On the thirteenth, the tongue had so much recovered itself, that there did not appear any loss of substance whatever, only a fissure of half an inch in depth, in the anterior part of it; and, as that now seemed to be exactly in the centre, there was not the smallest deformity.

The preceding cases, in the view which it is intended to take in the present Paper, are to be considered as so many experiments, by which the structure of the tongue is in some

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some respects ascertained: They enable us to draw the following conclusions.

The internal structure of the tongue is less irritable than almost any other organized part of the body; therefore, the peculiar substance which is interposed between the fasciculi of its muscular fibres, is not in any respect connected with the nerves which pass through its substance to the organ of taste, but is merely a soft medium, to admit of great facility of action in its different parts.

The nerves of the tongue appear to be more readily compressed, and deprived of their power of communicating sensation, than nerves in general; and any injury done to them is not productive of diseased action in the trunk of the injured nerve.

If we compare the effects of compression upon a portion of the tongue with those of a similar compression upon the hæmorrhoidal veins when they form piles, or those of the testicle in cases of varicose veins of the spermatic chord, which not only produce very violent local inflammation, but also a considerable degree of symptomatic fever, it is impossible not to be surprised that the results should be so very different; since we are led to believe, upon a general principle, that parts are sensible in proportion to their vascularity, and that all the organs of sense, when inflamed, are more exquisitely so than any other parts of the body.

The tongue appears to have a power of throwing off its sloughs in a shorter time than any other part. Eight or nine days is the ordinary time of a slough separating from the common parts; in the boy's tongue it was only five.

Having stated the information we derive from these cases, respecting the structure, sensibility, and irritability of the tongue, it now remains to mention the advantage to be derived from them in a professional view; and so strongly is it connected with humanity, that it cannot be undeserving the utmost attention.

The information derived from these cases, enables us to attempt with safety, the removal of any part of the tongue which may have taken on a disposition to become cancerous. As this disease in the tongue always begins in a very small portion of that organ, it is, in the early stage, more within the reach of removal than when in any other part of the body; and as the glands of the tongue are independent of each other, the cancerous disposition by which one of them is attacked, does not so readily communicate itself to the others; and the part may be removed, with a greater

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greater degree of security against a future recurrence of the disease, than in other cases where this malady attacks a portion of a large gland, the whole of which may be under the influence of the poison, long before there is any appearance of its being diseased.

A New Method of preparing the Pure Gallic Acid.

By M. L. Schnaubert.

FOUR ounces of finely powdered galls are infused in water slightly alkalized with potash; the infusion which is of a very deep colour is filtred, and a solution of nitrate of tin is dropped into it, until no more precipitate is formed. The free acid of the liquid is then saturated with potash, taking care not to add the alkali in excess, and the precipitate is separated by filtration. The filtred liquid is then precipitated by acetite of lead, the weight and concentration of which is known. A greyish white precipitate is thus obtained, which is to be digested with diluted sulphuric acid, the proportion of the acid contained in which, must be to the concrete acetite of lead as one to four. After a sufficient digestion, the liquid is carefully filtred and evaporated, in order to afford crystals. If the gallic acid thus obtained, should contain a small quantity of sulphuric acid, it may be deprived of it by digestion with gallate of lead.

In order to be certain of the quantity of sulphuric acid necessary for the decomposition of a given quantity of gallate of lead, I previously dissolved four ounces of acetite of lead in sixteen ounces of water, and diluted one ounce of sulphuric acid in four ounces of water. By mixing these two liquids to afford the perfect precipitation, the requisite proportion was easily found. I must here observe, that it will be better to keep the gallic acid in a liquid state than to reduce it to crystals, because evaporation always renders it more or less brown. I am firmly persuaded that the gallic acid possesses the property of becoming brown by the action of light, at least, if in contact with the atmosphere. For if gallic acid be sublimed perfectly white, and then dissolved in water, it will be found after some time to have undergone this kind of alteration. M. Bucholt has made a similar remark relative to the same fact.

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Experiments *on the Substance vulgarly called* Gum Kino.

By Cit. Vauquelin.

THE name given to this substance is by no means suited to it; and were it not a common practice to give names to things before we are acquainted with their nature, it would be inconceivable how it should have been called a gum, having neither the physical nor chemical properties of one.

Neither have we any accurate knowledge of the tree or of the country that produces it; but it appears to have been first brought to Europe by the English, who made known its medicinal properties, and introduced it into our shops.

It is called in trade *kino* or the *gum-resin* of Gambia. Dr. Oldfield, who made it known to Fothergill, termed it the true gum of Senegal. In the Medical Observations and Inquiries, it is said to be brought from Africa, and the tree that furnishes it to be called by the natives *pau de sangue*.

As a medicine it is used in the form of bolusses, lozenges, aqueous infusion, and spirituous tincture, as a tonic and astringent.

Subjected to the action of fire, it melts and swells up considerably; yields at first a clear liquor, which in a few instants become coloured; a light and nearly white oil then passes over, which in the course of the process becomes coloured and heavier than the aqueous product. A small quantity of carbonic acid is likewise formed, with a large quantity of carbonated hydrogen gas.

The oil produced in this operation unites with caustic fixed alkalis, and forms a deep red liquor, that becomes of a dull green on exposure to the air.

The aqueous product is not acid, but has an acrid burning taste, owing to a portion of the oil retained in solution; and potash separates from it a large quantity of ammoniac.

Twenty grammes distilled with a strong heat left eight and half of a very bulky coal, marked with the colours of the rainbow; and this coal afforded seventy-two centigrammes of ashes, consisting chiefly of lime, silex, alumin, and oxyd of iron.

Kino is little soluble in cold water, but much more in hot, though a portion of it is insoluble. The solution is slightly acid; alcohol does not precipitate it, but separates

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some reddish flocks; when made with boiling water it grows turbid on cooling, and deposits a brown red precipitate.

A saturated solution is precipitated by mild alkalis, but water in sufficient quantity re-dissolves the precipitate.

Caustic alkalis likewise precipitate it, but if added in excess re-dissolve the precipitate.

Glue dissolved in water forms a very considerable rose-coloured coagulum with the solution of kino; and if the quantities be such, that both substances are saturated, the supernatant fluid will be nearly colourless.

Though these appearances indicate the presence of tannin in kino, it does not precipitate ferruginous salts black, but of a beautiful deep green, scarcely alterable by exposure to the air. This property it has in common with the infusions of cinchona and rhubarb; whence it is probable, that these three substances contain a principle of similar nature.

This principle, whatever it be, is very destructible; for, if a little oxygenated muriatic acid be poured on the precipitate it forms with iron, this loses its colour, and does not re-appear on the addition of an alkaline carbonate, which produces only a red oxyd of iron.

The solution of kino copiously precipitates acetite of lead of a yellowish grey; nitrate of silver of a reddish yellow; and tartrite of antimony of a yellowish white, but much more copiously than the infusion of tan or of cinchona; which seems to indicate, that it would be a better antidote in cases of persons poisoned by this metallic salt.

Wool and cotton being boiled in a solution of kino, and then dipped in a bath of sulphate of iron, appeared on immersion of a bottle-green; but being washed and dried, the colour became a blackish brown. It was very durable.

Hot alcohol dissolves kino very well, all but a small portion. Water renders the solution a little turbid, but precipitates nothing.

The portion insoluble in alcohol, nearly a fourth of the whole, has neither the bitterness nor astringent taste of kino; but, on the contrary, is rather mucous and sweet. It easily dissolves in hot water, and gives it a fine red colour. It is precipitable by alcohol; but neither by glue, nor by any metallic solution. On burning, it diffuses a smell resembling that of gum.

I suspect the presence of this substance favours the solution in water of the principle soluble in alcohol; for the latter is less soluble in water when separated from the former; and if the quantity of water necessary for dissolving

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the astringent part be not employed in the first instance, what is left requires a greater proportion of water.

Four litres of water, used at different times, left near twenty grammes out of a hundred of kino undissolved. — The residuum grew soft like a resin in boiling water, and all of it, except seven decigrammes, was soluble by alcohol, to which it imparted all the properties before observed in the astringent matter.

Sulphuric acid diminishes the action of water on kino, instead of increasing it, as it does with respect to the resinous part of cinchona.

It is capable of being used for tanning leather.

From what has been said, it appears that the greater part of kino consists of tannin, and is neither a gum, nor a gum resin. But there is a slight difference between it and the tannin of galls and oak bark, which precipitate iron of a blue black, while kino precipitates it green, in which it resembles cinchona and rhubarb. If, therefore, it were to become plentiful and cheap, it might be employed for all the purposes for which astringent vegetables are commonly used.

Mr. Vauquelin is not the first who discovered the common error respecting kino. In the New Edinburgh Dispensatory, Dr. Duncan has entered pretty fully into the subject, and asserts it to be in reality an extract; and that what we have now in the shops is not brought from Africa, but chiefly from Jamaica. He adds, (in a letter to Mr. Nicholson) that this is an extract of the *coccoloba urifera*, or sea-side grape; while the finest kino of the shops, and what from some circumstances he supposes was the sort analyzed by Vauquelin, is the product of different species of *eucalyptus*, particularly the *resinefera*, or brown gum tree of Botany Bay, from which country a parcel was imported some years ago.

CRITICAL

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CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

The Anatomy and Surgical Treatment of Inguinal and Congenital Hernia, illustrated by plates; by ASTLEY COOPER, F. R. S. Member of the Royal Medical and Physical Societies of Edinburgh, Lecturer on Anatomy and Surgery, and Surgeon to Guy's Hospital. Folio, pp. 60.

THOUGH the world in general is not quite aware of the extreme frequency of hernia, every medical man knows that this disease is one of constant occurrence in every rank and station of life, and the most limited practitioner must feel the necessity of studying a complaint which forms no inconsiderable share of the business of the surgeon.

Notwithstanding the valuable labours of many eminent men in illustrating this difficult disease (for taking into account all its varieties and anomalies it may well be considered as difficult) there was still wanting (in this country at least) a clear accurate history of all that minute anatomy has been able to discover, and sound surgery to practise in the knowledge and treatment of hernia. This deficiency, it appears to be the object of the present volume to supply; and the high reputation of the author, as an anatomical teacher and practical surgeon, induces us to take an early notice of this publication.

In the Preface, the plan of the work is explained to be purely practical; that is to say, it is meant not to be a history of the opinions and practice of all who have written on hernia, but a history of the disease itself, founded on extensive and personal observation. "I have almost uniformly, in the following work," Mr. C. observes, "avoided quoting the opinions of authors on this part of surgery. This I have done, certainly not from any wish to slight or undervalue the labours of some of the most excellent physiologists and practitioners that have adorned our profession, but because it did not form a part of my plan to give a history of this branch of surgery, and because I wished to confine myself to the very wide scene of observation afforded by the two noble institutions of St. Thomas's and Guy's Hospitals, and to that portion of the practice of this metropolis which I have been personally enabled to authenticate. I have therefore related no case, and given

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no remark, to the truth of which I cannot vouch; and for the same reason, the subjects of all the plates annexed to this volume are from preparations either in my own possession or in the Anatomical Museum at St. Thomas's Hospital."

The Author pays a just compliment to the correctness of the Anatomical Nomenclature lately proposed by Dr. Barclay of Edinburgh; at the same time, however, that he declines adopting it in a practical work like the present. Probably this has been the most prudent course, though the defects of the present nomenclature are very striking in the description of relative situation, and the author is sufficiently aware of it by attempting something systematical in the employment of the terms at present in use.

The first Chapter contains a description of hernia in general, and particularly of the formation of the hernial sac, a subject which has excited some controversy, and has produced much nice and acute anatomical investigation, as it forms the most characteristic feature of the disease.

Few are so ignorant at the present day, as not to know that the antient term *rupture* or *bursten* is founded on an erroneous idea of the complaint making an opening or laceration of the parietes of the abdomen, and that the sac is formed by a gradual elongation of the peritonæum following the course of the spermatic cord; but there are circumstances in the density of the sac, adhesions, and the like, which are to be explained by more accurate anatomy. Sometimes the sac is wanting, the reason of which Mr. C. explains to be, either where the force of protrusion proceeds beyond the point at which elongation stops, to that where absorption begins; or where the hernia occurs at preternatural openings through the abdomen in the parts of this cavity not lined by peritonæum.

The second Chapter is a short, condensed, but admirable sketch of the anatomy of the parts connected with inguinal hernia. It is particularly here that (as was observed in the Preface) care is taken to preserve uniformity in the terms of relative situation commonly employed, and the whole is drawn up in the very clearest and most perspicuous manner. We rather wish that the Author had given some precise name to the *upper opening* from the abdomen at which the hernia first quits this cavity, before it takes its oblique downward course along with the spermatic cord to the abdominal ring. It is now sufficiently known, and has been taught in the Anatomical Schools for many years, that the passage of the spermatic cord out of the abdomen is not immediately opposite to the ring, but higher up towards the superior spinous process of the ilium, and this orifice ought to have had some designation as well as the abdominal ring.

The description of the fasciæ given off by Poupart's ligament, or, as Mr. Gimbernat terms it, the *crural arch*, is very minute. Mr. C. mentions two, more peculiarly concerned in the formation of hernia; one of them is noticed by Gimbernat, the other is here made the object of particular attention. It is sent upwards from the crural

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crural arch, immediately behind all the abdominal muscles, furnishing them with a tendinous expansion, and passes on each side of the spermatic cord, leaving a hole for its passage. It appears more than any other to regulate the size of the upper abdominal opening, and to be the specific contrivance which Nature has prepared for supporting the contents of the belly when protruding against this weak part of its parietes. The course of the arteries connected with hernia, and particularly the epigastric, is described with a minuteness adequate to the importance of the subject, where a want of knowledge in the operator will expose the life of his patient to imminent risk.

In the third Chapter, Inguinal Hernia is particularly described, both from its outward form and the appearances on dissection. The gradual approach made by the pressure of large herniæ of the upper abdominal opening towards the ring is exhibited, and some of the rarer varieties of situation relative to the spermatic cord, or a part of its contents. Of the diseases with which Hernia is liable to be confounded, the Varicocele appears to be that which is the most perplexing, we shall therefore give the Author's diagnosis.

" But of all the diseases of the scrotum which are ever mistaken for hernia, none is so much so as the Varicocele. Often have I known persons (even the children of medical men) to wear trusses for a supposed hernia, which they complained did not fit, gave them pain, and could not prevent the descent of the tumour, when it was found that the disease was the enlargement of the spermatic veins. Varicocele has indeed many marks of hernia. When large, it dilates upon coughing, but not otherwise; it appears in the erect posture, and retires when the body is recumbent; and it is first observed near the ring. The only sure method of distinction with which I am acquainted is this: Place the patient in the horizontal posture, and empty the swelling by pressure upon the scrotum; then putting the fingers firmly upon the upper part of the abdominal ring, desire the patient to rise. If it is a hernia, the tumour cannot re-appear as long as the pressure is continued at the ring; but if a varicocele, the swelling returns with increased size; owing to the return of blood into the abdomen being prevented by the pressure. Some judgment may also be formed by the feel of the tumour, for that of varicocele is always ropy, as if a bundle of cords were contained within the scrotum."

The causes of Inguinal Hernia are described in the fourth chapter.

Many sound and good remarks are introduced in the fifth chapter, on the use and application of trusses in the reducible hernia. The precise part of pressure is determined by the sure guide of Anatomy to be, not at the ring, but higher up, opposite the upper opening, more approaching the ring however in large and old herniæ than in the small and recent.

Irreducible hernia is next described, and some valuable cases introduced in illustration. The use of the laced bag truss is strongly recommended, where the return is absolutely impracticable.

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The symptoms of strangulated Hernia are given in the next and very important Chapter, with that minuteness which is only the result of long experience and accurate attention. The seat of strangulation is the point to which the chief attention is always to be directed. The Author finds it to be sometimes at the ring, but much oftener above it, at the upper opening into the abdomen. The supposed *spasmodic* nature of the stricture is thus ingeniously illustrated. The ring itself being tendinous, cannot assume the state of spasm; "but when the strangulation is above the ring, a portion of intestine protrudes under the edge of the internal oblique and transversalis muscles, compressing them, which in their turn being excited to contraction by the irritation of this pressure, react upon the intestine with a force sufficient to produce a strangulation accompanied with spasmodic symptoms."

The thickening of the mouth of the sac, Mr. C. finds by dissection to be a rare occurrence.

The treatment of strangulated hernia and the means for reduction by the *taxis*, or without the use of the knife, are given in the next chapter. The whole is purely practical, and has every evidence of being founded on very extensive observation. It may be considered as a fair specimen of the surgery of a considerable part of this metropolis. We shall not enumerate the various applications auxiliary to the taxis, but remark upon one or two of them.

In speaking of that powerful remedy the tobacco glyster, the author gives a caution which ought not to be forgotten. The dose here prescribed is only *one drachm* of tobacco infused for ten minutes in twelve ounces of boiling water; and he adds, "to those who have commonly heard of two drachms being thrown up at a time without bad consequences, this may appear an useless precaution; but, instructed by personal observation, I can venture to assert, that whoever practises this often, will meet with effects which will lead him to repent his rashness.'

"I once saw a man with whom the tobacco glyster had been used in the quantity of two drachms without a reduction of the tumour, who about half an hour afterwards was put upon a table to have the operation performed, when his pulse was found so low, his countenance so depressed, and his body covered with cold sweats, that he was ordered back to bed, and on carrying him thither he expired."

Another case is added, in which *only one drachm* of the tobacco was used, which produced violent pain, vomiting of matter smelling strongly of tobacco, and terminated fatally about half an hour afterwards, evidently from the effects of the remedy.

An useful precaution is given on the application of ice, which is, not to let the part be moistened with the melting ice, as a long application of cold accompanied with wet, has been found to produce a local mortification or frost-biting of the integuments. This happened to a patient of Mr. Sharp and Mr. Cline. The ice should therefore be tied up in a bladder.

[To be continued.]

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Observations on Pulmonary Consumption; or, an Essay on the Lichen Islandicus, considered as an Aliment and a Medicine in that Disorder; by J. B. REGNAULT, M. D. &c. Second edition. 8vo. pp. 112.

THE first edition of this pamphlet was noticed in vol. viii. p. 463. Since that time the lamentable disease which is the subject of it, has engaged more general attention, and the means of prevention and cure have been more accurately considered. The remedy and treatment recommended by Dr. R. have been extensively tried, and in many instances with the desired success.

The present edition is considerably enlarged by the introduction of several new chapters; from the last of which we extract the following Observations, as they appear to merit the general attention of the public.

"It has long been the custom in England to send consumptive patients into warmer climates, such as the south of France, Spain, or Italy, for the sake of enjoying a drier and purer air. Without attempting to investigate the origin of this practice, let us enquire, in the first place, what proofs have been adduced in support of the opinion that a dry air is most favourable to the consumptive. Uniform experience shews us, that such invalids are much worse in a dry serene air, such as generally accompanies an east wind in this country, while, on the contrary, they are much better in situations where the air is mild, and charged with humidity; such as the south of England, or the sea, when the wind is in the south or west quarters. The function of the lungs requires perpetual and considerable motion, or expansion and contraction, and their flexibility or suppleness is supported by a thin aqueous mucus which lines all their cavities, and is secreted there for that purpose. It appears then, that an atmosphere charged with a certain degree of moisture is friendly to the lungs; and that it is a powerful means of preventing the inflammation which would destroy their motion, as happens in pleurisy and in a hot dry air.

"The bodies of animals ought naturally to be in a kind of vapour bath, formed by an atmosphere of their own, which always contains humidity to the distance of some inches; an air too hot and dry dissipates this continually, and that the more easily as it is supplied very scantily on account of the exhausted state of the fluids of the body.

"In hot sandy climates, as Egypt for example, all the resources are employed which art can suggest to moderate the heat and supply the atmosphere with the necessary moisture. They bathe frequently; they make wells in the middle of their houses; they receive the cool air of grottos by means of tubes; they live in cellars in the hot weather; keep their windows open during the night, and close those carefully which are exposed to the sun, during the day; they sprinkle their apartments with fresh water, or spread leaves or flowers over them; thus the air becomes charged with the moisture

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ture that evaporates, by which its elasticity is diminished, and the parching dryness of it rendered supportable.

" Dr. Pugh has demonstrated, by arguments founded on experience, that the climate of Naples or Nice, is very inimical to consumptive people. He instances a great number of English who died in a short time in these towns, a large proportion of which would certainly have escaped if they had remained in England, or chosen other parts of the south of France. He then proceeds to enumerate certain cantons of France, which he prefers to any part of Italy. He mentions, for the winter season, the environs of Avignon, of Nimes, and of Pezenas; principally because these districts are at a suitable distance from the sea, the influence of which he thinks so prejudicial in cold weather.

" In summer, he prefers Bareges or Bagneres, both situated on mountains, even to the mountains of Cevennes, which should be left about November, in order to return to the proposed winter residence.

" Though we approve Dr. Pugh's opinion, we would ask, what occasion is there to leave England, since it presents the very advantages we go so far in search of, and is exempt from the inconveniences attending distant changes of place? If change of air, in an atmosphere most equal and least agitated by tempests, is advantageous to persons of weak or diseased lungs, we ought to chuse this atmosphere as near as possible to the country where such invalids have previously lived; for if it be too remote, they will be exposed to new dangers in the journey. The different temperature of distant climates, the different exhalations from land and water, from animals, vegetables and minerals, have a powerful influence on different constitutions, and on health in general.

" To these important considerations, which are sufficient to determine our voluntary choice of situations for invalids as near their own homes as possible, we may now add the imperious motive of necessity. An ambitious enemy has shut the English out from France, Italy, and Spain, so that now they ought to do what reason has long suggested to them, that is, to seek for and prepare suitable situations for invalids, in their own islands. Bath and the hot-wells of Bristol have long been resorted to by asthmatic and consumptive patients; but the mild and sheltered vales of Devonshire and part of Cornwall offer situations far more desirable. It is a consideration of no light importance, that those who are obliged to leave their families for the recovery of health, may easily correspond with or be visited by their parents, children, or relations, and on many occasions be attended by them. The want of this convenience, together with the dangers and expences of distant travelling, have proved fatal to many a valuable life, by deterring patients and their friends from encountering long journies. Nothing seems necessary to draw these situations into general notice, but the patronage of a few noble and respectable families, to encourage the building of hotels, baths, promenades, and making good roads

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to the adjacent towns. A small part of the sums heretofore expended in visiting the continent would be sufficient to secure all the salutary advantages of foreign climes on the English shores, without risking the dangers of voyages and travels. The mildness of the air on the south-western coast of England, Wales, and Ireland, is abundantly proved by the myrtles and other tender plants resisting the usual winters without artificial warmth. And surely it must strike every patriotic mind, that retaining the wealth of the nation, or distributing it in the country, is infinitely preferable to dissipating it among foreigners. We hope these observations, which are no less dictated by prudence than necessity, will promote inquiries and exertions, which cannot fail to improve the districts where they are made, as well as contribute to the general health and prosperity of the British empire."

MEDICAL AND PHYSICAL INTELLIGENCE.

[FOREIGN AND DOMESTIC.]

Our Readers have been acquainted in a former Number of this Journal, of Dr. Trommsdorf's discovery of a new earth, which he found in the Saxon beryll, and to which he gave the name of Agust Earth, on account of its forming tasteless salts. The fossil itself, in which it was said to be contained, has since been received into the system of mineralogy by the name of Agustit. This discovery however is now annihilated by the latest researches of Hauy, Vauquelin, Klaproth, and Karsten, and the agust earth is to be exploded from the catalogue of simple bodies. Mr. Karsten, of Berlin, who was one of the first mineralogists that admitted the agustit in his valuable mineralogical tables, at the request of Mr. Vauquelin, transmitted to him a small quantity of this fossil, adding also some specimens for Mr. Hauy, as both gentlemen were curious in convincing themselves of the identity of the fossil, as well as of the new earth contained in it. In a letter which Mr. Karsten received some time after from Mr. Hauy, he was informed of the arrival of his present, and, at the same time, of the interesting results which Vauquelin and Hauy had obtained by their analysis of the Saxon beryll. Mr. Hauy examinining this fossil according to his method, found it to have the same form as the phosphat of lime or apatit, and the chemical analysis of Vauquelin agreed exactly with the opinion of his colleague; for he could trace nothing in it but phosphat of lime. Mr. Karsten, surprised at receiving this intelligence

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gence from those great naturalists, re-examined a small quantity of one part of that fossil, of which he had sent the other part to Paris; and the few experiments he could at that time undertake, seemed to yield the same results with those of Haüy and Vauquelin; but in order to obtain a perfect chemical analysis of the agustit, he requested Mr. Klaproth to submit it to a new analysis, acquainting him at the same time with the intelligence received from Paris. This gentleman immediately complied with his request, and sent him soon after the following account: "Pure pieces of augustit, after having been reduced to a fine powder, were infused with nitric acid, in which the powder dissolved for the most part; but on heating the liquor a perfect solution was effected. The clear liquor was divided into two parts. 1. One half of it was accurately neutralised with ammonia and treated with a solution of quicksilver in nitric acid, which had been prepared in the cold. A phosphat of mercury was precipitated, which being properly heated, left behind phosphoric acid after the evaporation of the mercury. 2. The rest, or the second half of the above-mentioned solution, on being treated with oxalate of kali, yielded oxalate of lime. This substance, edulcorated, dried, and strongly heated in a platina crucible, gave quick lime, which being infused with water formed lime water; and dissolved in nitric acid and precipitated by sulphuric acid, it gave sulphat of lime or gypsum; and precipitated by carbonated kali, it was changed into carbonat of lime." From these experiments it appears, that what is generally called Saxonian beryll is only a variety of apatit; and that if Mr. Trommsdorf has not analysed a different fossil, which he might have received by the false name of Saxon beryll, the existence of the agust earth must be denied, till further information is received from that gentleman.

Dr. Friese, of Breslau, has employed the digitalis in three cases of pulmonary consumption with the greatest success, and thus added a new evidence of the antiphthisical virtue of that efficacious plant. The patients were in the first stage of the disease, and two of them affected with tubercles. They spat blood, discharged a great quantity of purulent matter, and had a high degree of fever, and colliquative sweats. The remedy was given in form of powder and in infusion, and the cure was concluded with bark and lichen islandicus. The digitalis was given by degrees in such doses till its narcotic effect could be perceived; it generally caused vomiting, giddiness, and dilatation of the pupil. It visibly diminished the number of pulsations; and in one case the pulse fell, in the course of six days from 110 and 115 to 60 beats in a minute, and was raised again to more than 80, on having discontinued the remedy for some days.

Cit. Conte has discovered a new mode of preventing the oxydation or rusting of iron and steel. For this purpose he recommends a coin-

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a composition of fat oil varnish, with the same quantity or at least with four-fifths of rectified oleum terebinthinæ. This varnish is laid on thin and even by means of a sponge, and is suffered to dry in a place where it cannot be spoiled by dust. It preserves the metallic gloss, and no trace of rust is ever perceived on things thus varnished. It may likewise be applied on copper, the polish and colour of which are always preserved by it, and it is particularly recommendable for surgical and other instruments.

Mr. RENAUD is of opinion, from some experiments recently made, that arsenic in a metallic state has no effect on the animal body. Metals, in general, seem only to act on the animal body, when in a state of oxydation; hence all metals which are not easily oxydable, have but little or no effect on the living body. Thus quicksilver, as a metal, has not the least action, but only a mechanical one, depending on its natural heaviness; whereas, in an oxydated state it proves strongly stimulating, and often corrosive. Many difficulties however occur in making experiments with metallic arsenic, this metal being already oxydable by the mere contact of the air; besides, the slightest trituration is capable of oxydating it, on which account it cannot be given in powder; and in pieces it will only act with its surface, because it dissolves with great difficulty in the stomach. For these reasons, Mr. R. took the arsenial mundic (mispickel in German) which may be reduced to a fine powder without losing its metallic gloss. Mr. R. gave this substance from 18 gr. to 2 drachms to dogs, without perceiving any symptoms of a deleterious effect.

Signor BRUGNATELLI has communicated, in a letter to Van Mons, the results of several experiments with the action of Volta's pile on animal fluids. Blood taken from an ox, lost its colour and cogulated, when brought in contact with the positive metallic plate; at the negative pole it received only a black colour. Milk brought in connection with the positive pole, coagulated, receiving an agreeable acid taste; the negative pole was covered with saccharum lactis. On repeating the experiment with gold wire instead of platina, the coagulated milk received a rose colour. Saliva slightly coagulated at the positive pole; but ox-gall coagulated at this pole to a substance exactly resembling that which is produced by treating the gall with acid. Urine deposited urée at the positive pole, and at the negative, phosphat of ammonia.—The white of an egg coagulated at the positive pole, in the same manner as by the application of heat; and the yolk of an egg was hardened round the metallic plate.

The largest specimen of amber, which has ever been discovered, was accidentally found in a meadow near Insterburg, in Prussia. It

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It is almost as long as half a sheet of common paper, and exactly as broad, and about two inches and a half thick; its weight is thirteen pounds, seven ounces and a half. It is pale yellow, and its surface covered with a brown opaque crust. Its value however is much lessened by several holes that penetrate toward the middle. It is said that 5000 dollars, or about 900l. have been offered for it; and the Armenian merchants, who trade in amber, have asserted, that it might probably be sold for 8000l. in Constantinople. It is now preserved in the Royal Chamber at Koenigsberg.

Mr. BRUGNATELLI observes, that on treating common paper with nitric acid, we obtain a great quantity of suberic acid mixed with oxalic acid, which proved that M. Fourcroy was right in ranking cork amongst the immediate constituents of vegetables.

M. CHENEVIX, in a letter, dated Dresden, observes, that Des Costils dissolves raw platina in nitro-muriatic acid, and precipitates it by muriate of ammonia at several times. The first portions are yellow, the last redder. He reduces the red precipitate, and obtains an alloy. He exposes this alloy to a current of oxygen, and a blue oxyd is volatilized; pure platina remains behind. The blue sublimate is the oxyd of this new metal.

A new vegetable salt, containing a new acid, has been discovered by KLAPROTH. It consists of a saline mass, exuded from the trunk of the white mulberry, *morus alba*, *L.* on the surface of the bark; it has the appearance of a coating, in little granulous drops of a yellowish and blackish brown.

Mr. WHATELY has in the press a work on an Improved Method of treating Strictures in the Urethra.

Mr. SYER will commence his Third Course of Lectures on the Elements and Practice of Midwifery, &c, at his Lecture Room, No. 102, Leadenhall Street, on Thursday, March 1, 1804, at half an hour past five o'clock in the evening.

TO CORRESPONDENTS.

Communications are received from Dr. Moodie, Mr. Marson, Mr. Hardman, and Studiosus.

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Medical and Physical Journal.

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ON THE UTILITY OF THE OXYGENATED MURIATIC ACID IN THE CURE OF SCARLET FEVER, *with an easy Mode of preparing it for Medical Purposes; by* JOHN AYREY BRATHWAITE, *Member of the Royal College of Surgeons, in London, and Surgeon to the Lancaster Dispensary.*

HAVING frequently experienced the inefficacy of the common mode of medical practice in the scarlatina anginosa, I have been induced to make some inquiries into the nature, cause, and treatment of that disease, which has been prevalent in this town and neighbourhood for three years last past; the result of my observations have been the discovery of a remedy in this disease, which is as much entitled to infallibility as mercury in the lues, or bark in the ague; it is easily prepared by any apothecary, of materials with which his shop is or ought to be always supplied, and requires no complex pharmaceutical apparatus, by which often those unaccustomed to practical chemistry are liable, even from proper materials, to prepare chemical preparations totally different in their properties from those intended.

As I have no doubt but the contagion of the scarlet fever produces an extraordinary degree of dis-oxygenation of the system, with great debility, and exhaustion of the sensorial power, I was led to suppose that oxygen, exhibited in some easy and pleasant manner, might not only destroy the contagious matter adhering to the tonsils, uvula, &c. but by penetrating the fine moist membrane of the lungs, and by chemical attraction uniting with the blood, excite the action of the arterial system, warming the extremities, increasing insensible perspiration, exhilirating the spirits, and invigorating the vital principle without exhausting it, would prove an efficacious remedy in this but too fatal disease. This I have experienced in the oxygenated muriatic acid, whose known property of destroying

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putrid miasms, and preventing infection, in a gaseous state, has totally abolished the absurd farragos of antient practice.

Variolous and vaccine virus exposed but for a moment to the vapour of oxygenated muriatic acid, lose their contagious properties, and the latter rubbed with one eighth of a grain of oxyde of iron *(rubigo ferri)* will rarely communicate the disease; what then may we not expect from this active and elegant preparation? Elegant I may justly intitle it, as, when properly prepared and sufficiently diluted, it may be administered to patients of all ages, being a safe and efficacious remedy, possessed of a slight degree of grateful acidity.

When called to a patient in whatever stage of the scarlet fever, my practice for two years last past has uniformly been as follows: One drachm of oxygenated muriatic acid is mixed with eight ounces of distilled water in a phial and shaken together; this quantity should be taken every twelve hours, by a patient from fourteen to twenty years of age, but it is preferable to administer it in draughts divided from the quantity above mentioned, into ℥ij. ℥jß. ℥j. and ℥ß. bottles, as the patient's age and situation require, ordering them to be taken at such periods as for an adult to consume the quantity in the time mentioned, and to younger patients smaller doses, as half a drachm or two scruples of the acid to eight ounces of water. By this method, the oxygen gas is not separated and lost, each time the phial is opened, as may easily be perceived by its smell in the apartment; it is also absolutely necessary the medicine be placed in a dark situation, wrapped in paper, to prevent the dis-oxygenating influence of light.

Since the use of this medicine, I have never had recourse to emetics, purgatives, blisters or diaphoretics, a regular perseverance in the oxygenant remedy has universally succeeded, my patients rapidly recovering, and being seldom afflicted with those complaints succeeding the scarlet fever, such as pain of the joints, paucity of urine, and universal anasarcous swellings; even should these follow, I recommend a continuance of the medicine, until these symptoms entirely disappear, which will be found much earlier than by the usual mode of treatment; indeed, if the oxygenated preparation is duly persevered in, I am of opinion those painful and distressing affections will rarely occur. It is also possessed of this desirable property, that it may be easily taken by children, who generally are the most numerous patients in this disease, and to whom all medicines

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medicines are administered with difficulty. I have heard them frequently cry for *that stuff which mended their throat*, as they expressed it; indeed, in that respect, its effects are truly admirable, far surpassing the disagreeable practice of gargling and syringing, which in numerous instances, even if possible to do it, is productive of mischief; how far superior then must be a remedy which by passing over the infected and frequently ulcerated part immediately, not only gives instantaneous relief, but entirely removes that fœtid smell originating in several cases from these parts? Patients often wish to be frequently sipping a little of the oxygenant liquid, which is not improper, but it must be always done out of a wine glass, as admeasurement with a spoon is dangerous, the oxygen rapidly oxydating the metal of which it is composed, and by that means conveying into the stomach a poisonous fluid, from which death might ensue.

The muriatic acid has long been used as a medicine, and Sir William Fordyce strongly recommended it in the ulcerated sore throat and putrid fever, but the oxygenated muriatic acid has, I believe, been rarely employed. Dr. Crawford* once took twenty drops of it diluted with water, but soon afterwards found an obtuse pain with a sensation of constriction in the stomach and bowels; this uneasiness, notwithstanding the use of emetics and purgatives, lasted for several days, and was at last removed by drinking water impregnated with sulphureous hepatic air; this effect he attributes to the manganese which had been used in the distillation of the acid, containing a portion of lead; I should rather suppose it proceeded from the dose of twenty drops being taken; oxygenated muriatic acid readily gives to living animal bodies its super-oxygen, and the remains are common muriatic acid, a dose of which, similar to the above, would undoubtedly in delicate constitutions produce similar effects. In no case whatsoever have I found it necessary to exceed the quantity before mentioned, but it has sometimes been done by my patients, through an anxious desire to get well; the same uneasiness has however been produced as mentioned by Dr. Crawford, though the preparation was made so as not possibly to contain either lead or any other metallic substance.

To prepare the oxygenated muriatic acid in a perfect state of purity; put two ounces by measure of distilled

* Philosoph. Trans. vol. 80.

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water into a narrow tubulated bottle, with a ground glass stopple; into this gradually pour, by measure also, as much muriatic acid, the specific gravity of which is as 1170 to 1000 of distilled water, frequently shaking the phial; add then to it two drachms of oxy-muriate of pot-ash,* which in a little time will fall to the bottom, the acid seizing the small portion of alkali, and leaving beautiful globules of vital air, which rise slowly towards the surface, diminishing as they ascend, super-oxygenating the acid; a little agitation now and then facilitates the process, but it will be three or four days before the acid becomes extra-oxygenated; the stopple should be put loosely into the phial, and tied over with a piece of bladder, but not too tight, allowing it to move when the gas is rapidly extricated; this process should be performed in a dark situation, and the oxygenant medicine after preserved by putting over the bottle a circular piece of pasteboard, to prevent it from being injured by the dis-oxygenating power of light.

It is not in scarlet fever only that this preparation promises to be of advantage, I have found it useful in angina maligna, and other diseases proceeding from or producing a dis-oxygenation of the blood; in many lingering cases of the late influenza, it was exhibited with evident advantage in the doses above mentioned.

From the trials made by Guyton Morveau and others, it appears that the oxygenated muriatic acid, in a gaseous form, possesses the power of neutralizing and destroying contagious miasmata, even in rooms where the sick are present, without the slightest inconvenience; possessed of amazing expansibility, this gaseous oxygenant diffuses itself over the most extensive apartments, leaving nothing untouched, and touching nothing it does not appropriate, rapidly oxydating metallic bodies, particularly iron and steel, which should be removed, and radically destroying the most offensive odours, thereby rendering innocuous perhaps deadly contagious poisons.

To completely purify any apartment when a patient suffers in the scarlet fever, or any other contagious disease, so as to render it perfectly safe, not only to the attendants but to the rest of the family, take a china tea cup and saucer; put in the cup two ounces of common salt, and half an

* The best oxy-muriate of pot-ash I ever had, was made by Mr. Hoyle, an ingenious chemist in Manchester, 100 grains yielding nearly 74 cubic inches of oxygen gas.

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an ounce of the black oxyd of manganese, previously powdered with one ounce of water; then take an ounce and a half of sulphuric acid, and pour a little of it now and then into the tea cup, among the other ingredients; immediately an amazing quantity of oxygenated muriatic acid gas will be disengaged and fill the apartment; this should be suffered to remain only a few minutes, removing it out of the room into the stair-case, by which means the whole house will be become impregnated with this gaseous oxygenant; it will be proper to take it into the room frequently during the day, adding to it a little fresh sulphuric acid, and then replacing it in its former situation.

It was my intention to have transmitted a more minute account of the scarlet fever, and its mode of treatment by this oxygenant remedy, illustrated with cases; but suffering at present under an arthritic complaint, I found myself inadequate to the undertaking; perhaps, at some future period, I may again take up the pen to corroborate what I have asserted; should this, however, be the means of rescuing one individual from a premature grave, the intention of the writer will, in some degree, be accomplished.

Lancaster, March 1, 1804.

Case of Extra-uterine Pregnancy; *communicated by* Mr. T. M. Kelson, *of Seven Oaks, Kent.*

In the month of June 1801, I was sent for to Mrs. Townsend, the wife of a reputable farmer in an adjoining parish, who was suffering very considerable pain from a partial suppression both of urine and stools. Upon inquiry I found she had sufficient reason to suppose herself about ten weeks gone with child, having missed her courses two successive periods, a very trifling appearance at the end of each month excepted. During this visit I did not think it necessary to examine her, but ordered an opening medicine which afforded her much relief. In the course of a few days she was suffering again in the same way, and was relieved by the same means. Shortly after a total suppression of urine took place, and upon examination I discovered, as I then supposed, that it arose from a retroversion of the uterus, the lower part of the pelvis being completely filled with a hard tumour and the os tincæ not to be found without much difficulty. I relieved her with the common female

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catheter, to which I was obliged to have recourse for a fortnight longer. At the end of that time the impediment, as I had foretold, was suddenly removed, the uterus taking pretty much its natural situation. From this time she went on in the usual way, gradually increasing in size, and the motion of the child became daily more and more sensibly felt, and as she further advanced it became very strong, but she always told me that it was very different to what she had felt with her former children, that it appeared never to move in front, but on each side and at her back bone; this I little attended to, as I was then quite unsuspicious of her true situation. I had fixed her time for the middle of January 1802. She herself thought that it would be in the beginning of the month, and on the first evening of the month she was in so much pain as to send for me; I found upon going to her that her pains were periodical, and had quite the appearance of beginning labour, however as they were not very quick or pressing, and having another engagement, I left her with the full expectation of being again called in the night; but that was not the case. I learnt the next morning that the same sort of pains continued three or four hours after I left her, that she then went to sleep, and was quite free from them upon waking; the child at this time was in strong motion. From this period I heard no more of her for three weeks, when I was called in great haste, and upon my arrival the pains were much stronger and quicker than before, so much so, that I was induced to remain with her five or six hours. They then having gradually subsided, I went away without examining her. After this I visited her daily; she continued languid and unwell, and on the fourth day she had shiverings, succeeded with some feverish heat. Her breasts began filling with milk, and by no means in a small degree, for on the fifth day they were as painfully distended as one usually meets with in a healthy woman who had been delivered that time. All these symptoms were more than sufficient to make me suspect, what upon examination evidently appeared to be the case, that the fœtus was extra-uterine. Upon the first and every other examination, I found the parts somewhat in confusion, the child plainly to be felt through the vagina, the uterus not enlarged, but forced upwards and forward, the os tincæ quite closed; from this last day of pain, all motion of the child ceased. A month after she became regular in her female health, and has without interruption continued so to this time. From the constant weight of the

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the tumour it appears to be sunk lower, and I think somewhat lessened in size, but she has still the appearance of a woman far gone with child; there are prominent and pretty sharp points in the tumour, which when pressed cause considerable pain to the intermediate parts, and there appears on the left side to be nothing more intervening than the muscles and integuments. It is difficult to account for its quiet and inoffensive retention. Hitherto Nature has made no efforts to get rid of it. From the pressure on the bladder and the rectum, she has frequent inclinations to make water and go to stool, but the general state of her health is very good. She was thirty-seven years of age when this pregnancy first began, and had not been with child for nearly ten years. Before that period she had five children, and her last labour she describes as a very difficult one. She is naturally a thin, spare chested woman, having scarcely the appearance of breasts when not with child; but what is peculiar, they are now very large, and have always some milk in them. For a considerable time after the death of the child, the milk was continually running out. At the end of two months, I think she would not have made a bad wet nurse.

This Case I meant for publication in the month of April last year, thinking it might be a great length of time, if ever, that I should have any thing further to add, but on the very day I drew it up my patient sent for me. I found her in bed with a very severe attack of influenza, which terminated in a violent cough. This in her situation was particularly painful and troublesome, and seemingly had the effect of altering the position of the tumour, as she again was troubled with suppression of both urine and stools, and was thus tormented, with the addition of sharp throbbing pains in her back, for some weeks. At the same time her general health and appearance were daily getting worse. Menstruation ceased, she had violent night sweats, a total loss of appetite, and other very alarming complaints, when suddenly a large quantity of very putrid slimy matter was discharged per anum; this evacuation, to a certain degree, continued several times a day for a month or more. By the immediate reduction of the tumour and other circumstances, I had no doubt but a communication was formed betwixt it and the rectum. Of this I was shortly fully convinced by the expulsion of the bones of an arm, and since that, at different times, of every bone of the fœtus, excepting those of the head, which I do not despair

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of adding to my collection. From the time that Nature found out this extraordinary way of getting rid of her burthen, my patient began to improve. She soon became regular, her appetite returned, the cough and night sweats disappeared, and she is now, independent of some local trifling inconvenience, enjoying very good health.

March 10th, 1804.

To the Editors of the Medical and Phyfical Journal.

GENTLEMEN,

IT must ever be the wish of the enlightened and liberal part of the profession, to impart for the good of mankind, that knowledge, which their practice and experience teach them to be worthy the attention of the medical world; and in my opinion the present critical juncture of affairs in a peculiar manner proclaims the necessity of contributing one's mite towards that fund which constitutes the methodus medendi in the department of Surgery.

On Sphacelus.

Two cases of this kind have lately come within my notice, wherein soda nitrata or nitre, has completely checked the progress of mortification. The first time I had recourse to this remedy, (which may justly be termed a sovereign one) was whilst I was Surgeon of His Majesty's Ship St. George; it was applied to a man's foot which was wounded with a cannon shot in an action near Cadiz; a mortification took place soon after the accident, owing to the irritation of splinters or spiculæ impacted in the tendinous and nervous parts, (so small as not to be discovered at first) and the destruction of the soft parts. The usual remedies in such cases were had recourse to; such as washing the mortified parts with spt. terebin. vini, &c, vinegar, and fomentations of bark, but without perceiving any benefit resulting from their application. The fœtor emanating from the wound, which was black and cadaverous, was not at all corrected, nor was any separation of the sphacelated parts perceptible; on the contrary, the disease was spreading rapidly all over the foot. In this dilemma revolving in my mind the various antiseptics which the materia medica afforded, I luckily thought of nitre, and began to use it very

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very finely pulverized in large quantities, sprinkling it all over the wound, covering it so perfectly, as to enable me to make some degree of pressure without soiling my fingers, for the purpose of promoting its union with the mortified parts; the wound was dressed three times a day as the climate was warm, and the danger from absorption consequently great. In the course of twelve hours the disagreeable stench issuing from the wound, which before was so extremely offensive as to make the nurses sick, was now quite gone, the extent of the mortification was soon discovered by a line of separation surrounding the wound; here the beneficial effects of the nitre were very evident both as far as related to its antiseptic as well as stimulant power, the former in subduing putrefaction, the latter by restoring energy and activity to the living parts, sufficient to enable them to throw off the causa nocens.

It may seem unnecessary to mention that as much of the sphacelated parts as could be removed by the assistance of the scissars and forceps, were taken away at every dressing, and the wound well washed, sometimes with vinegar, at other times with decoction of cinchona. By perseverance and strict attention to the above remedies, particularly the nitre, though the patient was reduced to the lowest ebb of human misery, which was sufficiently evinced by symptoms the most distressing and alarming, such as yellowness of the skin, a black furred tongue, tetanus, and some degree of locked jaw, extreme debility, quick and fluttering pulse, he was restored to health.

I found in this case, as I have done in many others, the exhibition of bark in substance do great mischief, though not given to near the amount recommended by some medical writers. One would imagine some medical authors were afraid of deviating from the paths of their predecessors, when they are found slavishly subscribing to their rules, whilst the conviction of their own experience should teach them the folly, and even criminality, of recommending medicines, which cannot boast of that consequence or efficacy, which they have laboured to bestow upon them.

It generally happens, as it did in this instance, that, though the patient previously to its administration, shall have some appetite, it soon fails, and the space of twelve hours entirely deprives him of all inclination to eat; his fever increases, and he loaths every thing offered him in the shape of food. This is not the worst consequence, the medicine at length proves so nauseating and disgusting, that the stomach, as if conscious of the violence done to it, arms itself with the resolution of rejecting this inhospitable

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able and noxious tenant. Such is the remedy employed by the vis medicatrix naturæ, to rid herself of matter so heterogeneous and offensive to this delicate organ, the primum mobile of the system. Nor can it be wondered at that this should happen, when you reflect on the indigestible nature of bark, however finely it may be pulverized; the human stomach is not like that of the ostrich, it will not digest iron; and it does not require much penetration to discover, that the digestive faculties of this noble organ are greatly impaired by disease: then how can it be supposed that a substance, which may with the greatest propriety be termed foreign, should not prove injurious, when other things, mild and congenial to it in a healthy state, are now offensive?

It is not my wish to have wrong inferences deduced from these observations, I have said enough to convince that I am inimical to the exhibition of bark in substance; yet I would not have it imagined that it cannot be employed with advantage in any form; indeed, I think far otherwise, for I am persuaded it is of infinite service when given in decoction, when you can augment or diminish its strength ad libitum, without clogging up the stomach with a mass of heterogeneous, indigestible matter; an advantage which will appear to every unprejudiced mind, of the greatest importance, as far as relates to the welfare of the patient and success of the surgeon, whose anxiety must ever be commensurate with the danger and difficulty of the case.

The other instance wherein the same plan of cure was adopted with success, was a mortification of the leg, originating from an ulcer, which degenerated into this state, from poor living and bad treatment of a pauper belonging to this place.

I am, &c.

Romsey, March 14, 1804. RALPH CUMING.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IT is impossible, I believe, for any candid observer to peruse our present metropolitan pharmacopœias, without deploring the great dissimilarity so conspicuous, not only in the nomenclature, the arrangement, the choice of *formulæ*,

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formulæ, but often, which is the most material fault, in the proportion of an essential article in the same identical compound. Whether we compare the pages with each other in either volume, or contrast the dispensatories themselves, we cannot but lament the great disparity; the want of precision, uniformity, and simplicity; and that, in respect to nomenclature, there should be so much dissonance of opinion on what ought to be retained and what rejected.

On this subject, which may, perhaps, be properly termed *national* pharmacy, much remains to be done; reform, and very great reform indeed, seems still wanting to render a pharmacopœia more generally acceptable, free from errors, and divested of those numerous ambiguities which disgrace its pages; in short, a pharmacopœia truly deserving the epithets *Imperialis Britannica*. I fear, however, unless a deputation from each college be authorised to take upon them to execute this important work, we must in vain look for unanimity and for that degree of improvement which, from the late rapid advances in chemical knowledge, we have a right to expect; and which, on account of the present happy union of these realms, seems now loudly demanded.

My motives for addressing to you the following observations, arise more from a wish to prompt some of your numerous correspondents, whose time and abilities render them more capable to take up this subject, and point out what ought to be done, and how best effected, than from conviction of my own competency. It may, however, be expected that I should accompany this general disapprobation with some reasons or proofs on which it is founded. I shall, therefore, for the present, content myself with offering a few examples, and in a very unmethodised and summary way, point out what I conceive to be culpable, leaving the subject still open to any future or more extended discussion. As the greater part of the objections are to be deduced from the *Pharmacop. Edinb.* it may be proper, once for all, to declare, that I have selected this work in consequence of its having been published at the latest period, and, therefore, more to be depended upon for perfection: I am also induced to make this choice from a firm belief that the College of Edinburgh stands second to no other in reputation, more especially for every branch of medical science.

In the Ph. Edinb. we find the same name sometimes put adjectively, at others as a substantive, and without any apparent

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apparent intention; on the contrary, for obvious reasons, rather liable to lead into error. We observe *opium, opiatum —scilla, scillitica—camphora, camphoratum—ammonia, ammoniatum.* The adjective *compositum* is applied at random in all its cases. Why add it to *tinct. cassiæ sennæ* and not to *tinct. mimosæ catechu?* Why tack it to *pilulæ rhei?* There is no other *formulæ* with which these may be confounded. *Compositum* is, nevertheless, often omitted where it ought to have been added. It seems a general resolution to apply the Linnæan names, together with all their systematic, generic, and specific expletives and appendages. This, I am fully persuaded, was never intended by that celebrated author; any farther than in systems of botany, natural history, and in a few other similar productions, these names seem inadmissible. In every *materia medica,* they ought to stand first among the *synonima;* and in determining the proper title for each *formula,* that name should be chosen which is short, free from ambiguity, and that has been, and is likely to remain, most universally intelligible. There is certainly as much impropriety in discarding *alumen, olibanum, minium, lithargyrus, cerussa, nitrum, galbanum, cicuta, cinnabaris, calamine,* and an infinite number of simple names, with which we are well acquainted, as it would be were the geographer to expel the word *ocean* or *sea* out of his vocabulary, and substitute *solution of muriate of soda, magnesia,* &c. or the physician who would expunge the word *water,* and order his patient to be immersed in some warm *oxyde of hydrogen.* The new chemical nomenclature is certainly inadmissible, in its full latitude, into pharmacy; we may, no doubt, take great advantages without rendering the titles of the necessary compositions so excessively verbose, so periphrastic, and full of circumlocution.

Gummi Arabicum is now changed for *gummi mimosæ niloticæ,* as if any danger could arise from retaining the former. *Gummi* is retained in the *emulsio gummi mimosæ niloticæ,* and omitted in the *mucilago.* Another formula, having the same ingredient for its basis, is named trochisci *gummosi;* and we have also, strange to tell, *emplastrum gummosum*: this, however, contains no *gum. mimos. nilot.* but is composed of empl. litharg. *gummi resina ammoniaci,* and *gummi resina bubonis galbani.*

The pilulæ *opii* of the Ph. Lond. may be said to be the proper parallel to pilulæ *opiatæ* of the Ph. Edin. but the former contains one-*fifth* of its weight of opium, and the latter only one tenth! It might appear invidious were

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I to say which College is to blame for not correcting this dangerous inequality; there should be no disparity in a composition of such moment, and of such consequence to the lives of the inhabitants in all the sister kingdoms, from all parts of which prescriptions are reciprocally and constantly sent. *Pilulæ hydrargyri* of both the colleges are in the same predicament, in respect to the proportion of the mercury; that of the London Disp. contains one-*third* of its weight; that of the Edinb. Coll. one-*fourth*; and the Dublin Coll. perhaps about a *fifth*; for this is by no means an accurate prescription. As to the pills being divided, it is absurd and quite unnecessary; the formula adopted by the two former colleges, provided the conserve be made with proper sugar, will keep very long without changing and turning hard, as has been alleged.

The conjunction *et* and preposition *cum* are put in several instances, very ambiguously. In some formulæ they mean a chemical combination; in others a mere mixture, as if the ingredients had been mixed together in a mortar or with a spatula. Thus *pulvis ipecac. et opii, pilulæ aloës cum colocynthide:* these are mixtures in which no chemical change has taken place. But we have *sulphas potassæ cum sulphure,* where a perfect *chemical* combination has taken place, and will prove to be completely distinct from a mixture of sulphur and sulphate of pot-ash made by stirring the two ingredients together. By the way it is proper to add, that this title is not well adapted, for it will be found to be a *sulphite,* not sulphate of pot-ash; its solubility, the form of crystals, and other distinctive marks, will demonstrate that the sulphureous acid is chiefly combined with the pot-ash. This process is very ancient, though rather clumsy, if a perfect *sulphite* be required; nevertheless, if the medicine be useful, as I have reason to believe it is, it ought not to be discarded.

Oxidum antimonii cum phosphate calcis. Are we well assured that a mixture of these two substances form exactly what we expect, and is there no better or more explicit title for this powder? Would the *pulvis algarothi,* which I apprehend to be the most uniform oxyde of this metal, joined to phosphate of lime, produce the same medicament as the *pulv. antimonialis* Ph. Lond.? Till these questions be answered we had better remain contented with the *name* as well as the mode of preparing the *pulv. antimonialis.*

Why is *flavus* tacked to *sub-sulphas hydrargyri?* There is no other prescribed. Perhaps *hydrarg. flavus* would have been unobjectionable. Indeed the *sub* and *super* are very

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very objectionable expletives, and, I humbly conceive, quite unnecessary in pharmaceutic names. We had better recur to old arbitrary names, some of which we still retain, such as *alcohol*, &c. &c. &c.

In a former paragraph I ought to have added, that as the Edinburgh College employ *opium* only in its *crude* state; and the London and Dublin Colleges have uniformly ordered opium *purified*, it will in all cases be requisite, in making comparative estimates of the relative strength of any formula, to recollect that the proportion in power is as 9 : 12.

Emplast. simplex contains one-fourth of its weight of *resin*, and the *emplast. resinosum* only one-sixth; it would have been more consonant to have named the first empl. *ceræ*, as in the Ph. Lond. and the latter empl. *adhæsivum*; for we may find many instances where the names are chosen more from the *quality* than the component ingredients of the mixture, such are *elect. aromat. pulv. aromat. trochis. gummosi*, &c. in Ph. Edinb.

Emplastrum oxidi plumbi semivitrei, when contrasted with *emplastrum lithargyri*, seems frightfully verbose. Surely the latter cannot be objectionable nor cause even a shadow of doubt. There is certainly too much play upon the word *oxidum* through the whole of the *Ph. Edinb.* *Cerussa* is distinguished as *oxidum plumbi albi*, whereas it chiefly consists of *carbonas* plumbi.

The word *impurum* stands frequently with an ill appearance, and very ungracefully. Why admit any thing *impure* when it is in our power to have it perfect. *Oxidum zinci impurum*, *carbonas zinci impurus*, and there might have been added some other *impura*, for, in the chemical department, they now and then occur. It has been lately shewn by an analysis, published I believe in the *Philos. Trans.* that there are many varieties of *calamine*; if so, why admit *carbonas zinci impurus*?

Sulphas zinci, as it now stands, must contain excess of acid enough to keep also iron in the solution, with which the zinc is constantly found united; and, as if the impurity should not be lost, there is an addition of acid in the subsequent formula, *solutio sulph. zinci*, *solutio acetitis zinci*. However carefully and accurately this may be prepared, an addition of acetite of barytes will demonstrate the presence of sulphuric acid. Sulphate of lead has been deemed soluble in particular circumstances, so it is mentioned in the *Philosoph. Journal.* In the above solution I suspect the sulphuric acid remains in the solution in composition

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position with some of the zinc, so that this solution is *acetite* of *zinc*, some *sulphate* of *zinc*, and dilute acetous acid. As *acetite* of *zinc* is certainly an excellent topical remedy, the above formula should be corrected. Why not, at once, dissolve pure oxide of zinc in acetous acid, and either evaporate or add distilled water, according to the desire of the prescriber. In all our dispensatories, very little attention seems to have been bestowed on the *materia chirurgica*.

What is called *oxidum arsenici* in the list of *materia medica*, is certainly arsenious *acid*, as a solution of it in distilled water tinges litmus paper red.

Tinctura ferri muriati should never be made with *green* muriate, which must be the case if oxidum ferri *nigri* be employed.

Is there any sufficient reason for retaining both carbonas ferri and carbonas ferri *præcipitatum*?

Tartris antimonii is not, as the title imports, a combination of the metal with the *acid* of tartar; for Bergman has shewn that there must be some potash to form the *emetic tartar*, as it has been very properly termed by our predecessors.

Ammoniuretum cupri may, as a medicine, deserve its place in a Pharmacopœia, but not the appellation here bestowed upon it. Besides the *sulphate* of *ammonia*, which must remain in the mixture, there is also carbonic acid, either attached to the copper or ammonia, or, probably, to both.

If *sub* be properly added to *acetis cupri*, why is it not to *acetis plumbi*?

In giving names to the *formulæ*, I am inclined to suppose that the colleges either had in view, or might have availed themselves of, some uniform adherence to general principles in forming a Nomenclature, and, by using some words adjectively or substantively, thereby more explicitly denote what is meant. In general, the classes of *tincturæ*, *aquæ*, *syrupi*, *pilulæ*, &c. when the second substantive is in the *genitive case*, for the most part we may conclude that a *part* only of such article is in solution, though that is at the same time supposed to be the *virtue* or *essential* part. Thus, *tinct. cinchonæ, rhei*, &c. *infus. sennæ, gentianæ*, &c. only a *part* of the several ingredients is taken up by the menstruum; and this rule might be rendered general. On the contrary, it may be seen that this mode of particularising has not obtained even in such instances where it was very appropriate. We have in the same volume, *alcohol ammoniatum*,

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ammoniatum, and *aqua ammoniæ*, *aqua potassæ*, *aqua calcis*; in all of these the whole of the article is in solution. Again, there is an *oleum ammoniatum*; now if we make it, as its title indicates, a parallel to *alcohol ammoniatum*, we shall discover a material difference; in the *alcohol* the whole of the ammonia is combined, but in the *oleum* there is superadded a quantity of water. Perhaps *potassa aquosa* would be more suitable, and calx aquosa, &c.; but these suggestions are not within my present aim.

I am, &c.

Long Acre, March 15, 1804. J. HUME.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE Bandage called the Bag Truss having been generally complained of, as inadequate to the purposes for which it is applied, I beg leave to present you with a Drawing of one of my own construction, which effectually suspends the scrotum, without being liable to displacement by the most violent exercise.

St. Mary Axe,
Jan. 21, 1804.

I am, &c.
THOMAS LUXMOORE.

PLATE I. represents the Bandage.

AA. The arm holes.

B. A strap passing behind the shoulders.

CC. Two straps to tie it across the breast.

DD. Four straps, connecting the upper and lower part of the bandage; two behind and two before.

E. Passes round the body, above the hips, and is fastened with hooks before.

F. Straps beneath the thighs.

H. The bag itself.

PLATE II. The Bandage applied.

AN

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M.ᶜ Lurmore's Improved Bandage or

Plate 1

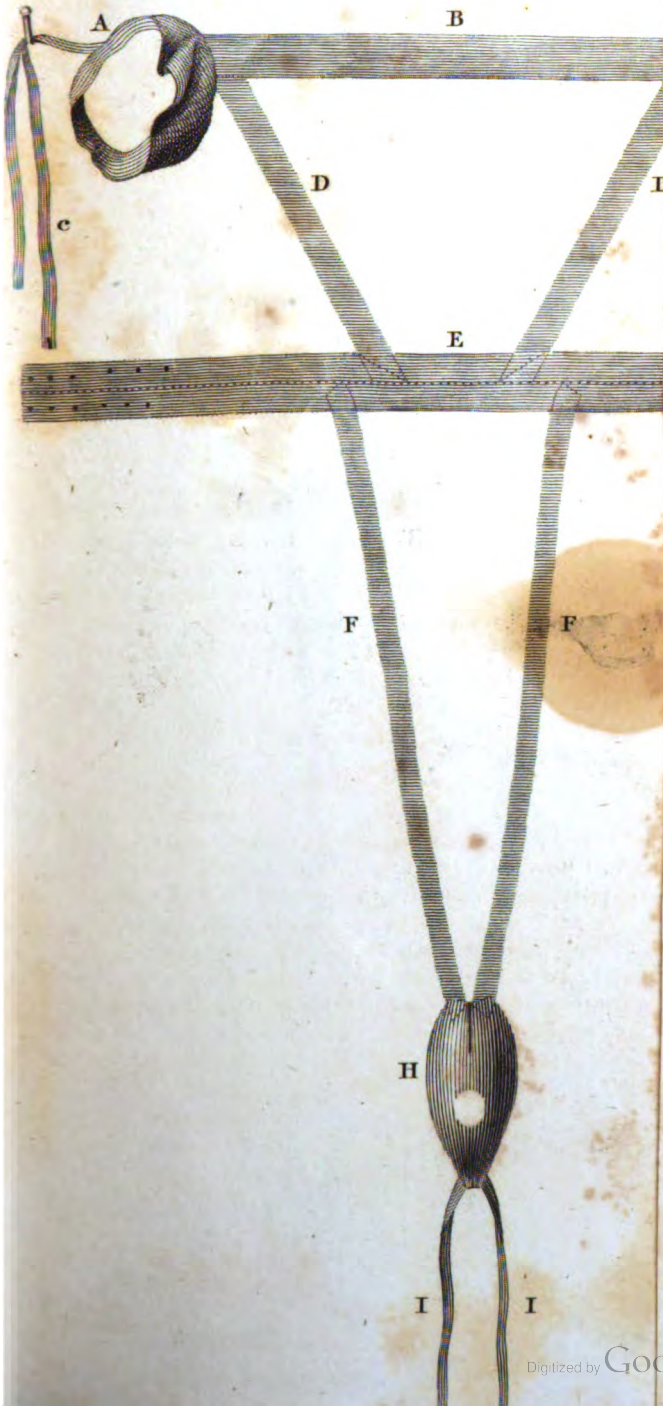

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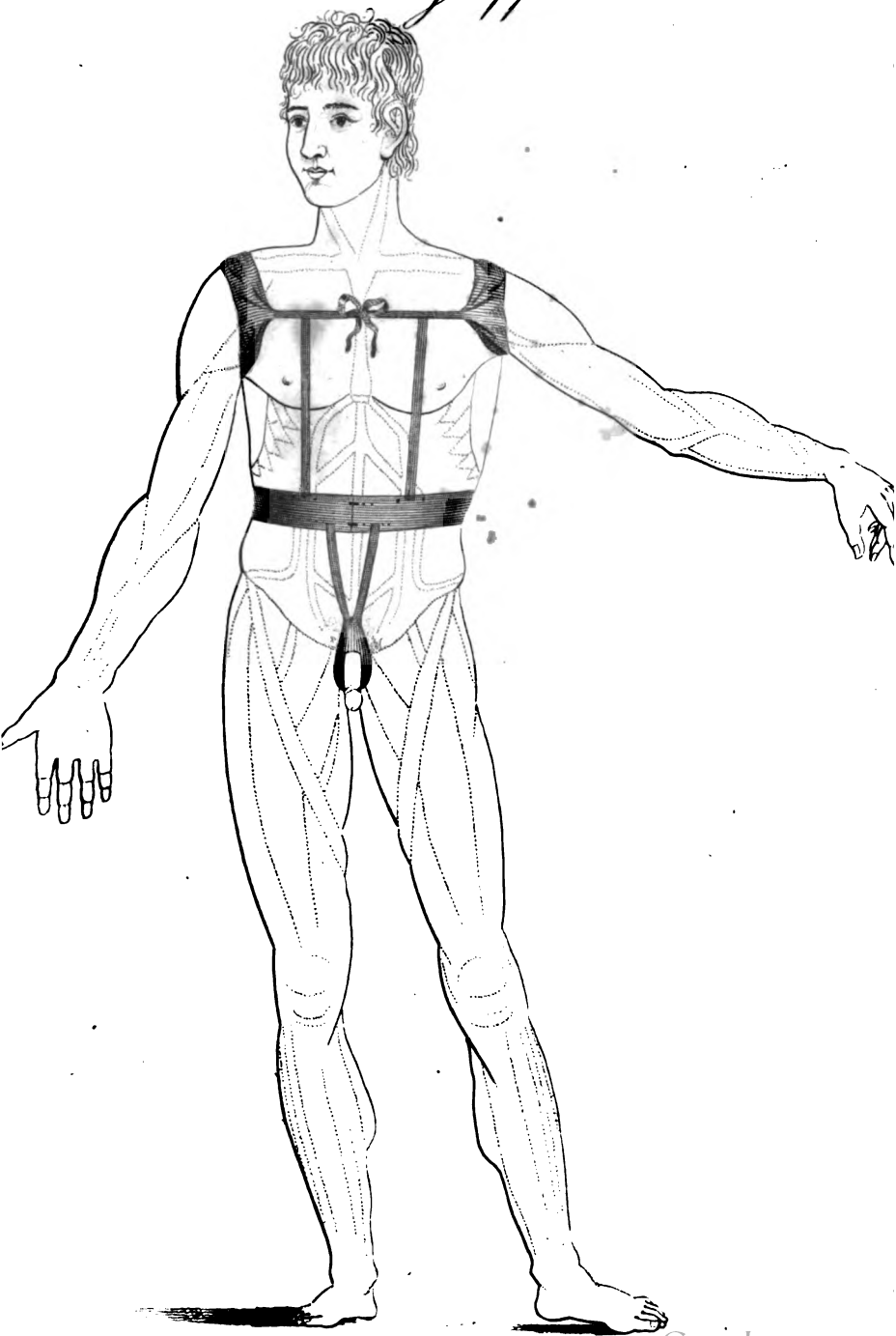
Plate. 2.

The Truss applied.



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AN ANEURISM OF THE AORTA, *with cursory Remarks on various morbid Affections of the Heart; by* JOHN MOODIE, M. D. &c.

JOHN SMITH, aged thirty-four, of a healthy constitution, by trade a carpenter, serving with a detachment of the Royal Regiment of Artillery, in the East Indies.

On the 15th of November, 1783, he was sent into the Hospital at Mangalore, having a large aneurism of the aorta, apparently making its way though the sternum, and raising up part of the right pectoral muscle to the magnitude of a large fist.

The tumour was attended with a strong pulsation, and had been gradually increasing from its first appearance. About three years previous to this time, as appeared from the account given by the patient himself, he had received a kick from a horse on the left breast, to which may probably be ascribed the cause of the aneurism. And it doubtless increased more rapidly than it otherwise would have done by great exertion, and the pressure of heavy and hard bodies against the chest, to which his business subjected him; and seems to have accelerated the alarming symptoms which now threatened the life of the patient.

In order to lessen the momentum of the circulation, and prevent as much as possible the disorder from increasing, repeated bleeding, gentle laxatives, with a spare diet, was directed, and he was cautioned to refrain from the use of spirituous liquors, and every kind of bodily exertion, or mental agitation. But notwithstanding every attention which could be paid to his case, when the tumour was examined on the 30th, it was found that the skin of the apex was broke, so that a fatal hæmorrhage was hourly expected.

However, his appetite being good, his rest undisturbed, and in other respects healthy, though warned of the event, so far was he from a sense of danger, that he thought the Medical Gentlemen had mistaken his case, saying, " he believed he should cheat them all." In this situation he continued till the 4th of December, when the blood suddenly discharged itself from the tumour in a considerable quantity, and with great impetuosity, but the hæmorrhage was for the present restrained by the application of dry lint introduced pretty tight into the orifice, and retained by the gentle pressure of a bandage.

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Nevertheless, this alarming circumstance did not prevent him from eating freely of animal food at supper; about two hours afterwards, being perfectly easy, he went to bed. Here it may be supposed, that in a short time the impetus of the blood might be increased by the addition of new chyle, which in how small a degree soever, yet sufficient to overcome the resistance of the pressure made upon the part. Accordingly, in little more than half an hour, a quantity of concreted mass was forced from the orifice, and the blood gushed out in a full stream, when the patient suddenly turned upon his side, and instantly expired.

Upon opening the cavity of the thorax, the heart was found in its natural state, excepting some stoney concretions which appeared to have been recently formed. The lungs, though paler than usual, had no marks of disease; but on moving them aside, so as to bring the aorta into view, we observed that the cyst of the tumour was evidently formed by a dilatation of the aorta at its egress from the heart, but in a greater degree at its curvature, and from thence continued along the *aorta decendens* to the vertebræ of the back, where, all at once, it assumed the natural appearance. The carotid and subclavian arteries were a little ossified.

The aneurismal sac was ossified in several places, and by its continual pressure upon the vessels embracing the periosteum of the spine and sternum, had rendered both those parts carious, and entirely made its way through the latter. And it can hardly be imagined that the arterial coats were capable of a distension so great as to reach quite through the sternum to the surface. However I have reason to think, that the last mentioned circumstance was occasioned by the blood having gradually escaped from the artery, and by its force condensed the cellular membrane under the sternum, so as to form it into a cyst.

An aneurism, or a preternatural enlargement of the heart, or its cavities, is a disease of frequent occurrence. But although the subject is extremely interesting in the practice of medicine, it is seldom much remarked or well understood. Hence it is of the utmost importance to be able to distinguish an internal aneurism from various other affections which it so nearly resembles; for after attentively considering all the symptoms of this deplorable disorder, we must in general acknowledge our inability to discover any appearances sufficiently unequivocal for this purpose. Such

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Such information therefore can only be derived from a comparison of a variety of facts illustrative of the subject.

While the force of the heart exceeds the resistance of the arteries, it continues of the same dimensions; but when the resistance of the latter, from becoming rigid and bony, exceeds the force of the heart, its cavities then enlarge. Hence practical anatomy furnishes us with many observations, shewing that the heart is thus frequently distended: and we find one in the Philosophical Transactions, where the left ventricle was observed to be three times larger than the right. Fernelius (in his Pathologia, lib. v. chap. 12) relates an uncommon case of this kind; where he says, that the frequent concussions of the heart were so violent and strong as not only to luxate, but even to break some of the adjoining ribs.

Marchettis, in his Anatomy, informs us, that he found a heart so large as to possess the whole thorax, and the ventricles of such a prodigious extent, especially the right, that a natural sized heart might be contained in it. Of the causes of this preternatural distension of its ventricles, one may be the air, which is not unfrequently found in the cavities of the heart, enlarging them immensely.

In a woman who died suddenly, Ruysch found the heart of vast magnitude, from the air with which it was distended, containing scarcely any blood, as appeared from inserting the point of a knife into it, the heart suddenly subsiding, as if a bladder full of air had been punctured.—Dissections convince us, that in the heart have been found inflammation, suppurations, erosions, concretions, and various other morbid affections, which may exist for a considerable time without any alarming symptoms. From the Academ. des Sciences, we have an instance of this kind, where, upon opening the body of the Duke of Brunswick, the heart was found eroded by ulcers, and the right ventricle appeared burst, from such an ulceration and erosion. To the above may be added the death of our late King. When the cavity of the thorax was opened and inspected by the serjeant surgeons, they found the right ventricle of the heart actually ruptured, and a considerable quantity of blood discharged through the aperture into the pericardium, so that he must have died instantaneously, in consequence of the effusion.

This appears the more remarkable, as it happened to a prince of a healthy constitution, unaccustomed to excess, and far advanced beyond that period of life when the

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blood might be supposed to flow with a dangerous impetuosity.

Morand, in the Academ. des Sciences above mentioned, relates a very uncommon case. When investigating the cause of sudden death in the body of a gentleman, there appeared, upon opening the pericardium, a large quantity of coagulated blood, and in the left ventricle a perforation, which was equal to eight lines in length, and the fleshy substance of the heart appeared so tender, that the probe made its way through in every part by the slightest pressure.

Upon examining the histories of this disease, we find, that aneurisms have generally arisen from blows, contusions, and other injuries about the chest, especially from overstretching the coats of the arteries by violent straining, or from erosion; instances of which may be seen in Lancisius. The celebrated Morgagni has also related some interesting cases of this disease; but more would be superfluous on the present subject.

When pointing externally, surgeons should be extremely careful in distinguishing this kind of tumour from others of a less dangerous nature; since it is known, that fatal instances have happened by opening them: an instance of which, I myself saw many years ago, where the patient expired a few hours after the operation. And since my residence in this city, I was consulted by a lady who had an external aneurism situated above the spine of the ilium, which appeared sufficiently capacious to contain upwards of three pints, and was doubtless filled with blood. Although I could not have supposed it possible that the nature of this tumour could have been mistaken by a medical man, nevertheless I was informed that a surgeon had proposed to open it.

I only advised bleeding, a low diet, and rest, with a compress wet in a solution of salt in water, applied to the part three times a day, and secured by the gentle pressure of a bandage. By means of the above, in a short time, the tumour entirely disappeared. That such tumour is an aneurism, may certainly be known from its being seated in a part where we know, from the anatomical structure of the body, that there is some large artery near, but especially when it has a manifest pulsation, also if the tumour be of the natural colour of the skin, diminishes by slight pressure, and returns again when that is removed.

But an aneurism of the internal parts of the body is inaccessible; all that can be done for the patient, is to prevent,

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vent, as much as possible, the disorder from increasing by the treatment in the aforementioned case.

When the cause of a gangrene in the extremities of old people is occasioned by a debility of the functions of the heart, so as to be unable to propel the blood into the extremities, we may despair of any effectual relief.

From polypous concretions, whether formed in the heart or its larger vessels, arise many irregular and painful symptoms; and there is, unfortunately, no cure suggested by authors for this dreadful disorder.

Bath, Feb. 20, 1804.

On the EPIDEMIC DISTEMPERS *of the Year* 1802. *By* NATHANIEL POTTER, *M. D. of Baltimore. Communicated in a Letter dated January* 28, 1803.

MEASLES.

THE year 1802 constitutes a very interesting crisis in the history of American epidemics, more especially to those who view the Measles, Scarlatina, and Yellow Fever, as originating from one great general cause, and, consequently, as links of the same pestilential chain.

The winter 1801-2 was the dryest and warmest that can be remembered by the oldest inhabitants of our city. The mercury stood above the freezing point not only during the day, but through the night, much the greater part of the winter. The gutters, docks, and other repositories of filth, emitted an effluvium little less offensive than that which is exhaled during the summer and autumnal months. Whether the result of putrefaction contributed in any degree to modify the characters of our winter epidemics, I shall not pretend to decide; but state the most prominent symptoms and greatest variations that occurred to my own observation, and leave the learned to deduce such conclusions as they may think reasonable.

Agreeably to the report of some of our practitioners, the measles commenced their reign about the first of January; but the symptoms were not completely developed in any case that occurred to my observation until the 15th of that month. During the months of November and December, I had remarked the unusual frequency of an indistinct efflorescence, which was occasionally associated with every assemblage of symptoms which might have been occasion-

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ed by the vicissitudes of the weather. It appeared to me to be the evanescent shade of the scarlatina retiring before the majesty of a more terrible enemy. It is true that the scarlatina had not been epidemic, but decided cases had occurred sporadically, not only in November and December, but during all the last year. This efflorescence was associated with inflammations of the parotid glands, and of the tonsils, with inflammation of the lungs and pleura, and with symptoms of catarrh, intermittent fever, and dysentery, and with a variety of anomalies that have no name in nosology, until it was suffocated with them all by the arbitrary interposition of the epidemic measles. No sooner had this disease discovered its proper features than every other fled before it; and what the poet says of Fame, may be justly applied to this as well as to other great epidemics;

"Mobilitate viget viresque acquirit eundo."

So truly despotic were the causes producing measles, that even many of those who had suffered their influence in former epidemics were not entirely exempted. This miniature picture of the genuine disease appeared in several forms, viz. in catarrhal symptoms, in slight inflammations of the throat, in a sense of heaviness over the forehead, in a frequent watery discharge from the eyes, and, in a few cases, it was manifested by an eruption and a morbillous cough. These affections gave rise to an opinion that the system could be susceptible of measles more than once, and I shall say hereafter that this opinion was revived in spring, when the scarlatina arrogated the same dominion over the measles that the measles had done over the minor diseases of the winter. This second sensibility to the causes of measles seemed to be heightened by some inviting predisposition; but, above all, by previous diseases of the lungs. Adults were much more susceptible than children to this second impression; whence it would seem that the latter laboured under fewer predispositions, or that the former had partially lost the former morbillous impression. I did not see a person under ten years old affected with the slightest symptom, who had the disease when it was epidemic here six years ago. I saw no vestige of it in subjects above forty years old. Children were less violently affected by genuine measles than adults, but there were few grown persons who had not previously experienced them. This epidemic did not appear to me to merit the appellation of contagious in the same degree as small-pox; nor, indeed, in a very considerable degree. The causes seemed to

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to me rather derived from the atmosphere than from a sick person; for many persons resided in families where the disease prevailed, and even slept with measly children with impunity. Should it be contended that measles are, strictly speaking, communicable from a sick to a well person, and should the opinion be well founded, is it not probable that some morbid or other strong impression had previously rendered such persons unsusceptible of impression from morbillous effluvia, just as the vaccine disqualifies the system for the reception of impression from variolous matter? There are, no doubt, many agents yet to be discovered that may act as eternal preventives of the most deleterious poisons. Will he not be entitled to immortality who shall, by such a discovery, obviate the effects of the saliva of a mad dog, or of the plague-engendering poison?

The symptoms of measles are so well known that I shall only notice such as do not constantly occur, or such as require attention in a therapeutic point of view. As in other epidemics, so in this, there were many cases so mild as not to require the interference of a physician: indeed, it was so light in some children that none but the physician discovered it. The head was more violently affected with pain and tension over the forehead than is common in the measles, although the swelling of the face was less considerable. The affection of the breast was the most important consideration, as the greatest danger was to be apprehended from effusions in the lungs: indeed, the organs of respiration, and parts adjacent, were affected in all the intermediate degrees between a slight cough and a most inflammatory fever. In some children the trachea and bronchial vessels where so highly excited as to occasion symptoms of croup. The affection of the stomach did not amount to that degree of puking which is so often mentioned by writers on measles; but a deadly sickness and a corroding sensation were constantly complained of. The affection of the stomach was less violent in adults than in children. The diarrhœa, so generally noticed in books, was seldom a symptom of this disease; never, that I know of, unless in consequence of neglected evacuations. The danger of the disease was in no wise in the ratio of the violence of the attack; for the cases that often proved most formidable manifested no turbulent symptoms until about the seventh day, when a sudden pulmonic affection often prostrated the system in a few hours. The ear-ach was often a symptom in children, as well during the inflammatory state as during convalescence. The eyes were some-

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times highly inflamed, although ophthalmia was oftener a consequence than a symptom of the disease.

The cure of the measles this year may be almost reduced to two simple remedies, *blood-letting* and *purging*; for when these were used in time, and carried to a sufficient extent, little or nothing remained to be done. These remedies were no less efficacious in removing the immediate symptoms than in preventing the consequences of the disease. This will be sufficiently apparent when we enumerate the deplorable train of consequences that followed their neglect. Such was the inflammatory grade of this disease, that a repetition of the use of the lancet was frequently required to the fourth or fifth time. As long as any symptom indicated the smallest relict of inflammation, the lancet was the most safe and efficacious remedy. The pulse required much attention, in some cases, to perceive the necessity of this remedy. Excessive inflammation or infarctions of the lungs, bronchia, or trachea, often obstructed the process of respiration in such a degree as to influence the pulse very materially. The skin was often cold, the cough laborious and unproductive, with all the symptoms of great indirect debility, with a pulse scarcely to be felt, and yet no remedy but venæsection could be depended on for relief; for the pulse rose after it, and free distinct action developed itself in all cases where the prostration had not continued a considerable time. This affection of the breast constituted the principal danger in this disease, but never produced death where the lancet was used early, and carried to a proper extent. Where the system had remained long in this semi-suffocated state, the lips and nails appeared blue, and a dark grumous blood was often expectorated. These were commonly the gloomy presages of approaching dissolution, unless the heart and arteries reacted after bleeding, which was generally the case when it was practised before the ninth day, and sometimes at a more advanced state of the disease. In this disease, as in all others where indirect debility is induced by excess of arterial action, bleeding, to be useful, should be practised with great caution. Large bleedings can never be used with propriety where this state has long existed, and the longer it has existed the less should be the quantity.

The blood drawn from a vein was uncommonly florid when drawn, while arterial action was vigorous and the pulse frequent, but lost its floridity as soon as the functions of the lungs became impaired, or indirect debility supervened. In the different degrees of prostration it manifested

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ed the following different appearances. 1. A copious deposition of a red precipitate to the bottom of the receiving vessel: this was deemed to be the first indication of a tendency to dissolution in the blood. 2. Blood of a darker complexion, separating imperfectly, with the serum bloody, and the crassamentum like blood half coagulated. 3. A total dissolution of the whole mass, appearing like molasses or tar, without a separation, and very black. Some have imagined that this tendency to dissolution is occasioned by the miasmata acting as the cause of the measles; but such an hypothesis seems improbable, as it occurs in pleurisy, and in many diseases of excessive, long-continued inflammatory action; though it must be confessed, that it occurs very often in such diseases as are called contagious. That the blood should be completely dissolved, and in a few hours after manifest a buffy coat, is almost an unanswerable argument against the solvent power of the miasma. This I have witnessed in measles, small-pox, pleurisy, yellow fever, and in other diseases. Does not this fact carry with it a strong presumption against the vitality of the blood? In the dissolved state it cannot be supposed to possess life, and it is equally difficult to suppose that it could recover its vitality in a few hours; nor is it probable that new blood could be so suddenly generated, when the chylopœtic functions are almost, if not altogether suspended. The blood was seldom sizy in this disease: the grade of the epidemic was so malignant that this appearance was seen only in mild cases.

Purging, though not as essential to the cure as blood-letting, was, nevertheless, a very useful remedy: calomel acted like a charm in removing the corroding nauseous sensation at the stomach. It was more grateful to that organ than any other purge, and required to be repeated every second day, or oftner, as there was a constant re-accumulation of that green acrid matter that was sometimes ejected from the stomach on the first attack; and this disposition commonly lasted four or five days. Where purging was neglected in the commencement, the evacuations from the intestines were often of a dark green, brown, or black complexion, just as it happens in other malignant fevers.

Emetics were sometimes useful in removing excreted mucus from the bronchia and trachea, though they could not be used with propriety in the early or inflammatory state, because they increased the inflammatory action, and particularly the determination to the head. They often afforded a temporary relief of the nausea at the expence of increasing

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creasing the fever. They proved more useful in the advanced state of the measles, when indirect debility began to progress, provided no decided local affection forbade them.

Antimonials were certainly improper medicines in this disease, they depressed the pulse, and seemed to act too much like the causes of the disease. Are not antimonials equally unfit remedies in all malignant fevers where the tendency to indirect debility is great, and more especially in those called contagious, where the *vis nocens* is so prone to induce the same state of the system?

Blisters were equally inapplicable in the first state of this disease, but co-operate powerfully with emetics in arresting the progress of indirect debility in the advanced state of measles, and sometimes called forth dormant excitement to great advantage.

Opium was equally inadmissible in all its forms, unless towards the latter state, when fever did not contra-indicate its prescription for the cough, which was often the last troublesome symptom, and seemingly occasioned by the action of a small portion of the pulmonary vessels.

Although measles generally run their course, in all cases, nearly in the same number of days, they manifested a trait discoverable in all malignant fevers; viz. a disposition to terminate in a shorter space immediately before they disappeared. This signal for the cessation of hostilities is very remarkable in scarlatina, yellow fever, dysentery, jail-fever, and others. The action of the morbillous fever produced one effect which I never saw from any other morbid action; it increased all the symptoms of gonorrhœa, and fomented that local action to a degree unknown to me. It was moreover evident, that, from the commencement of the measles to the termination of our autumnal epidemic, that disease not only resisted the common remedies, but yielded, in many cases, only to all the force of the whole train of antiphlogistic remedies. The difficulties attending the treatment of this disease, formed, during that period, a subject of astonishment and complaint for the practitioners of our city.

I should not have been thus particular in detailing the phenomena of measles, were it not that the popular opinion supposes them to be void of danger, and, therefore, seldom requiring the interference of a physician. A more hazardous notion cannot exist; for the neglect of no disease originates more deplorable consequences, even where the patient recovers. It therefore appears to me that this constitutes

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constitutes the most important part of the subject. I shall enumerate some of the most common consequences of neglected or maltreated measles; although the limits of a letter must abridge the list considerably.

1. Effusions in the lungs. 2. Effusions in the brain, constituting what are called cases of hydrocephalus internus: these soon produce death. 3. Debility of the lungs, inviting disease by constant predisposition. 4. Cough, often terminating in consumption, as well as the state immediately preceding. 5. Slow convalescence by the tedious process of expectoration. 6. Inflammations of the eyes were common; the palpebræ were highly inflamed both during the disease and long after its decline, and the cornea was often so completely covered with an excrescence as to obstruct vision partially or entirely; this was both a symptom and consequence of measles. This last symptom occurred principally among children, and began about the second or third day. 7. As ear-ach was often a symptom, so internal ulceration was a consequence of measles; and these frequently proved very difficult to cure. These occurred mostly in patients under puberty; and I met with several cases that resisted all the ordinary remedies, and yielded only to a salivation. Some were cured by injecting weak solutions of corrosive sublimate into the ulcerated ears. 8. Eruptions on the skin, comprehending several anomalies, but consisting more frequently of a thickening of the cuticle, similar to the affection of the cornea, which may be justly viewed as the scarf-skin of the organ of vision.—These probably make no figure as to the whole of the evils resulting from neglected or ill treated measles; but they are sufficient to deter all reasonable men from trusting to the wild aberrations of nature in the cure of so dangerous a disease; and it is certainly a very consolatory reflection, that none of them followed measles where *bleeding* and *purging* were judiciously used.

Before I relinquish this subject, I must be permitted to describe one case of measles; to omit it would be to lose a pathological curiosity, the parallel to which (so far as I know) is not to be found in the annals of medicine.

On the 15th of February I visited Ann Watson, aged eleven years, who had been attacked with the usual symptoms of measles five days before. She had been a healthy child from her infancy; and the immediate cause of calling for medical assistance was an affection of the throat unusually violent for this disease. Excepting this symptom, nothing uncommon was discovered until the eighth

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day, when a coarse furfuraceous scale was discovered on each point where the eruption had originally appeared; from these this thickening of the cuticle diverged, and in three days it enveloped the whole surface of the body in one universal scale. This induration of the cuticle increased daily, and, by the fifteenth, it had acquired the hardness and thickness of the nails, and apparently in no respect different from them. This scale was not confined entirely to the external surface of the skin; it was perceptible (though in a smaller degree) on the insides of the ears, nose and mouth, and as far down the œsophagus as could be seen. Previous to the eruption, as soon as the cough began to agitate the lungs, an unusual degree of redness instantaneously diffused itself over the face; not like the hectic blush (so common in inflammatory affections of the lungs,) confined to the cheeks, but extending over all the face. So violent was the influence of the lungs upon the skin, that this scarlet efflorescence, in some long paroxysms of coughing, extended over the whole body. The hair was materially interested in this symptom. The same substance was generated, in great abundance, from its roots, and seemed to be occasioned by a superfluous secretion of the substance forming the hair. Every hair acquired, at its root, the thickness of many hairs, and a whiteness, strongly resembling the *Plica Polonica**, as described in books. Such was the thickness and hardness of this horny excrescence, that scales of it were frequently pared off without the least sensation. For some days before death, the least motion of the body produced extreme pain; and, when she walked, a sound was emitted from the body as if she had been cloathed in buckram. On the twelfth day she became considerably blind and deaf. The cornea thickened until it put on the appearance of having been burnt, and total loss of vision ensued. The deafness did not progress in the same ratio, as the hearing continued, in a small degree, as long as she lived. The sense of smelling was also considerably impaired. The sense of tasting was entirely lost. Sugar and salt, and even brandy and milk, had the like effect on the tongue and fauces. The understanding was not impaired, nor the least symptom of derangement discoverable through the whole disease. From the commencement

* Is this disease, so common in Poland, an increased secretion and deposition of the same nature?

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mencement of the induration of the cuticle, the symptoms became more and more aggravated. The cough was frequent, hard, and unproductive, but little pain was felt in any part of the thorax, and no expectoration appeared to the last. The greatest pain was experienced in exercising the muscles of deglutition, and the thought of attempting it frequently occasioned the most violent convulsions, in one of which she expired while attempting to drink, on the nineteenth day from the attack. Every idea, however remotely connected with the act of swallowing, occasioned the greatest trepidation of mind, and agitation of the whole nervous system; in short, these symptoms recalled to my mind all the horrible scenes of a most deplorable case of hydrophobia which I witnessed at eleven years of age. No pain of the head was complained of from the beginning. The most excruciating pains through the whole alimentary canal were felt, though not constantly. On my first visit she was bled, and a temporary relief from the cough was obtained. The blood was uncommonly sizy. Every attempt to evacuate the intestines completely proved abortive, although the attempt was made daily, for fifteen days, with the most powerful cathartics. The warm bath was resorted to in the violence of pain; but the relief produced by immersion, however long continued, was scarcely perceptible. Opium, for the four or five first days, produced a temporary relief, but at length it effected nothing more than the same quantity of water. With a view of relaxing the rigid cuticle, the body was covered with warm olive oil, with the longest respite from pain that she experienced; and large doses internally, afforded considerable alleviation of the tormina of the intestines. I regret that I was not permitted to examine, by dissection, the viscera and other internal parts, and must, therefore, leave the subject for the contemplation of the learned.

MISCELLANEOUS REMARKS ON THE SMALL-POX AND KINE-POCK. *Communicated to* Dr. MITCHILL *by* Dr. MOSES YOUNGLOVE, *in a Letter dated New Lebanon Springs, February* 12, 1803.

CONSIDERING the hopeful progress of vaccination, any communication and discussion relative to the *small-pox* may, to some, seem unseasonable; yet, notwithstanding the flattering

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flattering prospect that the former will generally supersede the latter, as to the practice of inoculation, in all lettered States, at a time not very far distant, the prevalence of the latter, for reasons well known, is still considerable; and since, through its very infectious nature, and the great intercourse by commerce, this may, for a time, remain the case; and since investigations on any disease are more or less favourable to the study of every kindred disease, I take the freedom of offering to your inspection a few desultory remarks, with reference to what hath appeared in several publications relative to the small-pox.

A question is controverted by pathologists, whether two or more contagious diseases can operate at once on the same subject. It appears by the last number of the Medical Repository, that Dr. J. R. Coxe, in his late treatise on vaccination, which I regret that I have not seen, advocates the affirmative of this question; while Mr. J. Hunter, Dr. E. Darwin, and several others, maintain the contrary; and some of them make of that opinion a theoremic basis to very important deductions. From long and diligent observation, I am fully confirmed in Dr. Coxe's opinion in the premises. Many instances have occurred of my patients having, at the same time, the small-pox and measles, the small-pox and chicken-pox, the small-pox and the venereal disease, the small-pox and the mumps, and the small-pox and hooping-cough; and, as far as I could see, both diseases, in each case, proceeded in their usual progress, without any suspension of the operation of the one by the other, as several writers have supposed. Nor did the two diseases, that I know of, coalesce, and form a third intermediate *something of a disease,* as Dr. Darwin ludicrously supposes, (Zoon. §. 33. 2, 9) though they, in several cases, appeared to be in even progress; and in one instance, about the year 1785, I had a patient, when the measles were prevalent, who, about the thirteenth day after inoculation, and after pretty severe symptoms, broke out with the small-pox and measles both at once; but the latter appeared entirely apart, in blotches of an inch or two diameter; after which both happily proceeded in their natural operation.

As to the opinion espoused by Dr. Coxe, and other reputable authors, that some persons have had the small-pox more than once, as I have no proof to the contrary, so neither have I, in my practice, seen any evidence in favour of it. I once, through mistake, inoculated a family with infection of the chicken-pox instead of the small-pox, when

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when the operation produced, though slight, yet did not undeceive me (I being then young in the practice), till the person out of whom I had taken the infection, happened, under my eye, about a year after, to break out with the natural small-pox, which admonished me to inoculate them anew with the true infection; but had it not been for this seasonable discovery, these patients might, many years after, have had the small-pox by the natural way, and I might have confidently asserted that they had the disease a second time.

I have also known several instances in which practitioners of little experience have inoculated for the small-pox, with matter adulterated with the itch, or the like, which producing a sore, and a kind of eruption, were pronounced safely through the intended disease, yet have afterwards caught it, and then been said, as confidently, to have it a second time.

It is also asserted, by some writers, that there are, in every country, some to whom the small-pox cannot be given by inoculation, although they have never had it before trial; but in the course of my experience during the revolutionary war of these States, and since, on, I believe, not less than thirteen or fourteen thousand subjects, I have found none such when my infection was good; though I know several persons who, having had the disease very slightly, are generally thought to be of that description.

Nor have I ever, but once, seen the operation of the spurious or imperfect small-pox mentioned by Dr. Coxe sometimes to occur, which was about thirteen years since, when I began inoculation, between Kinderhook and Claverack, with old infection, procured from a neighbouring physician; but very singular was its operation; its taking effect was generally uncertain without repeated inoculations; its whole subsequent operation was mostly so slight, and often partial too, producing only a scabby eruption on the inoculated arm, that my utmost efforts could not, in every instance, produce an operation fully satisfactory; though a very few had the disease severely, with a natural appearance enough. This continuing the case for several weeks, while I could procure no other infection, but inoculated every succeeding class and family with the best I could select from the preceding, I was constrained, merely on that account, to desist, though reluctantly, after having inoculated nearly two hundred.

There is a query (Med. Rep. vol. i. p. 103) whether, in inoculation with the small-pox, the insertion of an unnecessary

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cessary quantity of the matter will increase the virulence of the disease? To this I answer, that though I have never plainly perceived any injury from this source on strong subjects, yet on tender infants, and weak patients in general, I have thought the insertion of much, especially by deep incision, and more especially if repeated in several places, to be very injurious, apparently through the unnecessary corrosion of the skin, cellular membrane, and even muscular flesh, and the consequent fever, depression, and the early and unnatural absorption of the matter into the mouths of the lymphatics.

As to the advantage there mentioned from a dilution of the virus before ingrafting, I am fully of opinion that it does in no case tend to the proposed mitigation of the disease, but that it is highly improper, rendering the communication of the disease far less certain, if a mixture of water, or any other extraneous matter, be unnecessarily admitted. And hence the reason is evident why the first limpid matter in the pustules is so very sure to communicate the disease by inoculation; this young matter being naturally the most pure from any mixture of common pus, or other foreign material.

Dr. Darwin queries (Zoon. §.33. 3, 1), whether the infection of the small-pox can be effectually cut out again after inoculation. I can partly answer this, by stating that, about fifteen years since, on the alarming illness of one of my patients (at Lunenburg, near the city of Hudson), with the appearance of an incipient yellow fever, on the third day after an inoculation which had undoubtedly taken effect, I freed him from it by cutting out a piece of skin less than a dime; but that I have since failed in a similar attempt, the fourth day after inoculation, in a manner, however, indicating, that if my incision had been made wider and deeper it might have succeeded: for about the ninth day after inoculation, as in other cases, the sore was surrounded with the true pock inflammation, and the eruptive progress following was as usual.

Dr. Darwin (Zoon. § 33. 2, 10) acknowledges his recent conviction, that the variolous matter never circulates in the blood of any person infected with it, as evinced by several experiments of inoculating with the blood without effect. Yet, notwithstanding this rational conviction of him and others, the position is controverted, and, as far as I am acquainted, generally discredited. As for myself, I was more than twenty years ago conviced of its truth, and have since been more and more confirmed in this conviction,

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tion, by having observed the following among other evidences of it.

1. Generally about five or six days from the inoculation all its observable operation is confined to the infected spot, or very near it; for a few days longer its progress from that is mostly slow and gradual; and then it first affects the glands and muscles on the same side, about the shoulder, neck, and head.

2. The following progress of the eruptive symptoms is very similar to that of various other potent irritations.

3. I have inoculated, I believe, much more than a hundred women, in the early and middle stages of pregnancy, with safety in most cases; and have frequently, long afterward, inoculated the children so born of them, who have invariably undergone the usual operation of the disease, which might not have been the case had the variolous matter pervaded them in utero.

Nor hath the argument any weight with me, when some former writers urge the infectious nature of the pustules emanating from the blood, as a proof of the presence of variolous matter in that fluid; for I have diligently sought, in vain, for any evidence of infection in the incipient pustules before maturation; and they never maturate but where they are exposed to the air; a portion of which may, perhaps, for that end, form a chemical union with some of the secretions of the patient, essential to their contagious maturity; and hence, in abortions from this disease, in the last stage of gestation, the pimples frequently observable on the fœtus have none of the variolous matter in them.

4. I have never known any person take the small-pox from the blood, though exposed to it, fresh drawn, at the most likely season, after the absorption into the lymphatics of a profuse and crystalline eruption, which is sometimes astonishing, both as to the quantity of matter receding from sight, and the quickness of its recession; insomuch, that I have once seen an instance where the bladdery cap of a large, full, remaining cyrstalline pock, was hastily pulled off, with a view, by applying a sponge, to hinder the retreat of its contents into the system, when it instantly ran in under my eye, before the sponge could be properly applied, and that too on the under-side of the patient's leg, in opposition to centripetal attraction. Yet, in some of these cases, when induced by improper treatment, on a seasonable resort to a warm and cordial regimen, and to the proper internal remedy, one may the next

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day see the happy return of the matter in large blisters, at or very near the pustules it before filled (though now so far divested of its late keen contagious virulence as to be very uncertain to inoculate with). It therefore appears to me probable, that its retrogression was only into the mouths of the lymphatics, which naturally inflames them, indurates their glands, and induces dangerous fevers, by the associate and sympathetic motions of the different parts of the system.

The writings of some transatlantic authors, formerly of credit, would induce a belief that it was once thought there, that the small-pox was not only modified in operation by particular sites and seasons of the year, but was frequently originated by these causes. These notions appear as the mere reveries of inexperience and error: but many descriptions of the disease, its operation and proper management, by writers of the best credit, such as Huxham's little black pock, which never was seen here in our day, &c. and many observations by Sydenham and others, his cotemporaries, equally variant from our experience, may perhaps be credited as then correct, by supposing a general change in the operation of the disease, gradually down the lapse of time from them to us; which is to me the more probable, because I think I can distinctly trace, by memory, a transition of this kind since I began to practice in the disease, which is about twenty-eight years. I see no more of the glandular suppurations in the latter part of the disorder, formerly so frequent and unavoidable. I can say almost the same of the rash, an eruption so common formerly at the close of the eruptive illness. Also the scarlet, or sometimes crimson efflorescence, well described by the acute Dr. Brown (Elem. Med. p. 219 and 421); also a border of like appearance round the inoculated spot on tender infants, near the time of eruption, varying in different shades of delicate colours to the eye, in transient and momentary flushes. The two last I have not seen these ten or twelve years, though formerly of pretty frequent occurrence in my practice. And, in general, I think it evident that the small-pox here hath grown far more mild and manageable than formerly under similar treatment.

VACCI-

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VACCINATION.

CITIZEN L. A. MONGENOT, Physician to the Hospital des Enfans Malades, at Paris, has lately published a Treatise on Vaccination, in which he has considered that interesting part of medicine in a point of view entirely new, by attempting to establish the theory of a truth now generally admitted. The existence of a fact may be sufficient for the vulgar, but a physical conviction will not be satisfactory to minds accustomed to develope causes; the man of science, as Citizen Mongenot judiciously remarks, wishes to obtain a moral conviction, which may submit the phenomena with which his senses are struck, to his understanding; it is not enough for him to see, he must comprehend. The author, therefore, makes it his business, not so much to ascertain a list of facts, as to concatenate a series of arguments — less to give calculations, than to furnish proofs; of course, he leaves to the Central Committee of Vaccination, of which he is a member, the care of ascertaining the credit due or not due to the enormous mass of facts of which it is the depositary. Faithful to the plan he has traced out, Cit. Mongenot begins by comparing the natural small-pox with the new specific. This parallel, established from day to day, and made with extreme precision, proves that vaccination proceeds in the same track as the small-pox, until the period when this latter occasions the general eruption; but as the general eruption, and the phenomena which accompany or follow it, do not constitute the essence of the small-pox; as it is only a series of symptoms which compromises the life of the subject infected with the variolous matter, without adding any thing to its future preservation from the same malady, it follows that vaccination and the small-pox exhibit a perfect analogy, as from the moment when they become dissimilar in their progress, this last has furnished its necessary period. Further, that it often stops of itself at this point, or, if it continues its further appearance, it is only to incur dangers more or less imminent, without offering any compensation in respect of future preservation. Here two questions suggest themselves: 1. Is it actually true that the general eruption and the maturatory fever do not constitute the preservative faculty of the natural or inoculated pock? When an assertion of this kind is confirmed by the testimonies in writing of Boerhaave, Van Swieten, Sydenham, Stoll, Rosen, Derosenstein, Huxham, La Condamine,

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mine, and of all inoculators, even those who are hostile to inoculation, we may undoubtedly consider it as incontestible. We know besides, that inoculation has been considered as a benefit, only because it diminshes in general the pustular eruption, the only cause of danger, and pretty often secures from the secondary fever and from suppuration, the pustules only appearing in very small numbers. In fact, the symptoms which pertain to the resorption of the puriform matter of the pustules shew the existence of two effects essentially distinct in the small-pox; the first owing to the immediate action of the virus on the animal œconomy, and the second depending entirely on the inflammation and the suppuration of the pustules; but it is evident that the persons who have had the variolous fever without eruptions, have been always protected from the small-pox; it is manifest, therefore, that the eruption contributes nothing to ensure preservation. The second question, *As it is proved* that the general eruption and the maturatory fever, do not constitute the preservative faculty, are they not merely a series of symptoms, the sole property of which is to compromise the life of the inoculated person? This second question is so closely conuected with the former, that it is unnecessary to pursue it through its different ramifications. All the danger of the small-pox consisting in the critical eruption of the pustules, it was natural to seek to prevent, or at least to diminish it. Inoculation, in part, effected this end; but it was not a specific, for it entertained the focus of the malady, and perpetuated the contagious principle of it; it even sometimes developed a small, confluent pock, frequently mortal: the celebrated inoculator Gandoger had fatal experience of it on his own son. The true specific against the small-pox can only be that, which, by a virtue *sui generis*, was to destroy it compleatly. The great Boerhaave had a presentiment that one day we should be happy enough to find it. *Quale inveniri posse, comparatio antidotorum et indoles hujus mali, faciunt sperare.* i. e. "*The possibility of such a dicovery is founded on the comparison of antidotes, and the character of the malady.*" Van Swieten expresses himself in a manner still more positive. "*Ex ante dictis constitit stimulum illum admodum exiguæ molis esse et tamen stupendas mutationes corpori humano, etiam sanissimo inducere, adeoq; sperari potest simile et remedium posse inveniri quod forte talis efficaciæ sit ut minima quoque ejus pars sufficiet enervando huic veneno. Ita forte invenietur aliquid quod venenum specifica vi domare, sicque morbum in ipsis incunabulis suffocare*

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suffocare valeat." Van. Sw. Variolæ, p. 54. i. e. *It ha therefore been proved that the mass of the contagious stimulus, in the smal-pox, is extremely small, and that, nevertheless, it can produce, even on the soundest body, stupendous alterations. There is, therefore, reason to hope for the discovery of a remedy perhaps so efficacious, that it will be necessary to employ only a very feeble dose to enervate this virus. In like manner it is possible to find a specific powerful enough to triumph over the small-pox, by stifling it as it were in the cradle.* We may further quote this passage of La Condamine: " Neither the eruption, nor the pustules, are essential to the natural or to the artificial small-pox; and perhaps a day will come that shall realise what Boerhaave and Lobb attempted; that is to say, to change the *exterior form* of this malady, without augmenting the danger. *Premier Memoire*, p. 90, &c. This specific, announced by Boerhaave, Lobb, Van Swieten, and so many others, is the cow-pock.

1. Because it exactly fulfils all the conditions required by those who have predicted it.

2. Because it is a preservative from the variolous or small-pock.

3. Because it prevents contagion, and is not contagious of itself.

4. Because it only produces a very slight malady.

5. Because its progress is identical to that of the inoculated small-pock.

And, 6. Because it does not occasion a general eruption equally terrible and useless.

Cit. Mongenot concludes by annexing an interesting list of cases of vaccination that have occurred within the sphere of his own practice. In this part he throws out a challenge to detractors, antagonists, &c. that it will never be possible to infect the *preserved* subject with the variolic virus. He began his experiments upon his own son, the only one of his vaccinated patients that he submitted to the counter-experiment, by causing him to be inoculated with the small-pock. " It was useless," adds the author, " to repeat this fine experiment upon others; but I owed it to fathers of families to afford them such a guarantee as a father only could give."

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

ABOUT two months ago a celebrated Professor * at one of our medical schools, announced an important discovery, which I have since been anxiously waiting to see communicated to the public; but as the knowledge of it appears either very confined, or men of science very tardy in forwarding its best interests, I shall, with your permission, state it as concisely as I can. He observed, that a learned Orientalist had in his possession an Arabic manuscript, which traces the origin of the small-pox to the same source from which Dr. Jenner has satisfactorily demonstrated the vaccine disease to proceed.

The Arabians have, in all ages, been famed for their horses and camels, and the milk of the latter constutes a part of their subsistence. Thus the virus from the diseased heel of the horse is transferred to the papillæ of the camel, in the same manner as it is to those of the cow; and the camel-pox is produced, the poison of which, insinuating itself by some slight wound into the human system, the small-pox, with all its attendant horrors, is the consequence.

Should this fact be authenticated, it will attract the attention of naturalists to the hitherto inexplicable causes of contagious diseases; and many that have eluded the scrutinizing eye of sagacity for ages, will probably be devoloped and brought to light; analogies will be discovered of which we have now no idea; and antidotes that may perhaps arrest the progress of some of the most dreadful scourges of humanity.

If any of your readers are acquainted with any further particulars relative to this very interesting subject, they would certainly promote the cause of science by communicating them to the public through the medium of the Medical Journal. Those to whom it may be no novelty can perhaps inform us to whom the manuscript belongs, and whether (as was intimated) a translation of it is preparing for the press, I am, &c.

B. S. Feb. 2, 1804. STUDIOSUS.

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* Mr. Abernethy.

To

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE several methods employed by surgeons for the opening of an abscess are three: 1. Seton. 2. Caustic. 3. Incision; each of which has its advantages and disadvantages, well-known to every practitioner in surgery, but unnecessary here to be enumerated. I mean to add to these a *fourth*, which, as far as I know, has not yet been brought into general use. This is no other than the common cupping-glass, exhausted of air in the usual manner, and applied over the abscess, at the time thought proper for its operation. By this contrivance the whole contents of an abscess, however considerable, may be very speedily evacuated, and the first discharge is made with a very considerable force, similar to an explosion. Of the safety of the practice no one will I think doubt; and of its utility I can speak from experience. But, it may be asked, why multiply means when those already known are amply sufficient? To this question I should reply, that, as the opening of an abscess by the cupping-glass is momentary, it is much less painful than the caustic; and, in timid persons, we are sometimes prevented from adopting either the seton or incision, from their dread of every thing that relates to the knife.

The selection of proper cases for the application of it I leave to the judgment of the surgeon himself, only further suggesting, that, besides the superseding of the lancet in many instances, it may be had recourse to advantageously for extracting the slough, or deposition of coagulable lymph, in the furunculus or bile, by the detension of which the pain of that disease is protracted, and the cure often long retarded. I once knew a country bone-setter who was famous for sucking tumours of this description; but it is obvious that he would have lost all his business in that line had this method occurred to the practitioners in his neighbourhood, as it would have been quite as effectual as his in extracting the core, without giving any offence to delicacy. To save the patient however from unnecessary pain, it may be proper to add one caution, which is, not to exhaust the glass of air more than is necessary to rupture the integuments; and as every square inch of an exhausted receiver is deprived of an external compressing force, equivalent to almost fifteen pounds avoirdupois, a

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proportionable degree of force may be calculated to exert itself from within, in bursting the external covering of the abscess. And any force beyond this would not only aggravate the pain of the operation, but might occasion a greater flux of blood from the ruptured vessels of the part, than, under circumstances of extreme debility, it might be prudent to produce.

From analogy too I have also used the cupping-glass after the application of leeches; and where it is desirable to make the discharge by them suddenly, or in a greater quantity than from the paucity of leeches could be expected to flow, it will be found a valuable expedient.

Manchester, Jan. 6, 1804. EDWARD HARDMAN.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I Have neither leisure nor inclination for Controversy, though I now find myself necessitated to answer Mr. Foge's letter, Vol. xi. p. 64.

From the many year's practice of Mr. F. and the particular turn of his arguments, it is pretty manifest he is a disciple of Chapman, who published a book in 1733, or thereabouts, for the use of *women midwives*. Chapman's practice was, immediately on the birth of the child to pass his hand into the uterus and deliver the placenta; he says, "I never suffer the womb to close before it is relieved of its contents, for the moment the child is born, I slip my right hand into the womb (at which time the parts, on account of their great dilatation will allow of it without force or pain) and gently assist in the extraction of the placenta."

Mr. F. is much puzzled as to the utility of the left hand to the sacrum; the woman being laid on her left side, the accoucheur, when he presses on the abdomen with the right hand, by putting the left hand on the sacrum, places the uterus in a state between pressure and resistance; the left hand too allows the practitioner to judge better of the necessary degree of pressure, and enables him the more steadily to apply it, for he is "never to lose the pressure he has gradually arrived to;" at any rate the left hand must be somewhere, and Mr. F. has not made any soreness of

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of the sacrum as an objection to its being placed there. Mr. F. in saying that gradually increasing a slight pressure means more than a slight pressure, is certainly true, but I believe my meaning is intelligible to your readers.

If Mr. F. had coolly and deliberately perused my paper, and not considered it as an attack on Chapman and his practice of passing the hand into the uterus, he would have found that I spoke of pressure "being otherwise of good effect," not confining it to the deliverance of the placenta; the other "advantages" of pressure then not being objected to by Mr. F. the practice remains admitted, and I repeat, that considerable pressure on the parieties of the abdomen is of good effect in every case of labour, independent of the delivery of the placenta, and that at the time I have mentioned; as to the soreness of the abdomen being an hinderance, it merely amounts to this, when the child is born the woman thinks she has sufficiently suffered, and that the heavenly moment should not be interrupted; but tell her the pressure on the abdomen is necessary, that the success of an expeditious recovery much depends on this circumstance, she will, considering it as a part of labour, neither murmur nor complain, though the soreness was to the extent depicted by Mr. F. I believe the passing the hand into the uterus would not be so readily reconciled, and the indelicacy of the practice would more than counterbalance the suffering from pressure on the sore abdomen, as represented by Mr. F.; but passing the hand is not exempt from pain on account of the irritable soreness of the parts. It would seem that there was some danger attending Mr. F's supposed soreness of the abdomen, in his saying "too often;" but it will appear rather curious that no author or lecturer, recommending pressure, should mention soreness as an objection to its use, and that Mr. F. of whose practice it has never formed a part, should make the discovery.

The next paragraph exhibits Mr. F. making free with Dr. Denman, to give the practice I recommend a fatal blow, for the way I apply pressure never causes the mischief he supposes; "he is very well assured, he says, if the knuckles, &c." He has very artfully indeed blended the "supposed" knuckles and my mode of pressure, to prove that my hand does the injury which he has represented, and then exultingly pronounces the passing of the hand to be a preferable practice. I will not dispute Mr. F's adroitness in passing the hand, nor his great success, but he seems to be aware of hazard, and tells of his lucky escapes;

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escapes; and it is remarkable that he should adopt nearly the same language as Chapman, to express his good fortune. Chapman says, "Nor are the examples of many women doing very well under the management of such midwives as never do pass the hand, any objection to this method, since no one was ever hurt by it, but thousands on the contrary, have suffered, nay died, by the omission thereof."

The pressure I recommend is not stated to retard the deliverance of the placenta, on the contrary must promote it; but Mr. F. insinuates that the pressure I recommend is tantamount to leaving it to the action of the uterus. I have no where said I would not pass the hand; and rather than let my patient be endangered, I would try all means in my power, but I would put off the practice till I was convinced pressure would not answer. Mr. F. has allowed that the hand may be easily passed any time, within twenty-four hours.

The forceps are very useful; but great as my address might be in the management of them, I would not officiously employ them.

Chapman observes, that "one clod being expelled, the vessels will sometimes bleed anew," which I am surprized Mr. F. has overlooked. I present it to your young readers to caution them, when called to a case as described by Mr. F. where the hæmorrhage has ceased before his arrival, and there is a return of faintings. They must not be too hasty in ascribing the faintings to existing hæmorrhage, and immediately apply pressure, for this pressure would remove the extravasated blood that had perhaps stopped the hæmorrhage; and however proper pressure might be in flooding, it would be very impolitic to hazard a hæmorrhage by it.

Mr. Foge says, he has been called to several cases where the midwife had so far neglected the woman, as to omit pressure, and leaving the atonic uterus to be filled with blood and the placenta to be excluded by the action of the uterus. Here Mr. F. has betrayed himself, and much as he has opposed pressure, it appears to "form a part of his practice;" he seems aware that it would prevent the existing hæmorrhage, and thus supersede the necessity of passing the hand to extract the placenta. In short, Mr. F. has afterwards declared that pressure is the only thing to be depended upon in all cases of flooding, not excepting the manual extraction of the placenta.

I am ready to grant the uncertainty of the expulsion.

after

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after being detained two hours, and I will add before that time shall have expired; but in admitting this, it does not convince me that in every case of labour after the child is born I should directly pass my hand into the uterus, which Mr. F's reasoning implies.

I have already mentioned the indelicacy of passing the hand, and I believe it would be attended with danger as well as difficulty, to a person so ignorant as to invert the uterus by pulling the funis; we have much more to dread from the same want of skill in passing the hand into the uterus; the inversion of the uterus is what rarely happens, but numerous are the mischiefs recorded of the passing the hand, and hurrying away the placenta. Smellie has several cases, Hunter, Denman, Lowder, &c. all have mentioned them in their Lectures.

Mr. F. has intimated, that pressure will "separate the placenta from the uterus;" it is fair then to conclude that it would urge it also through the contraction, having no resistance from the loose parietes of the abdomen or the atonic fundus uteri.

It is rather singular that Mr. F. should cite Dr. Denman's authority, to prove that pressure is seldom or never requisite, after condemning his practice as bad.

There seems much to admire in the wariness of Mr. Barlow; but, as he is so well able to answer for himself, I shall wave saying any thing on Mr. F's disapprobation of his practice, further than making a single observation. Mr. F. says, "I am one of those who can see no safety in allowing the placenta to remain four hours under the forementioned circumstances, I mean, an existing though not an apparent hæmorrhage, attended with great weakness and fainting." In an apparent hæmorrhage he would let the placenta remain four hours, but he has neglected to assign a reason for so doing.

I cannot help thinking Mr. F. culpable in secluding from the world his practice of pressure in uterine hæmorrhage; and as we are by no means certain that he will make it public, I will venture to suppose what he means: The pressure he proposes is, in all probability, by means of ligatures about the extremities, which is practised by some; and with this conjecture I shall close the subject.

I am, &c.

Worksop, Feb. 17, 1804. W. MARSON.

ON

On the Bite of a Snake cured by Volatile Alkali. By David Ramsay, M. D. *of Charleston, America.*

A Number of extraordinary cures performed within the last twenty years, in the East Indies, on persons bitten by snakes, have been communicated to the public in Jones's Asiatic Researches. These were effected by eau de luce, or by volatile caustic alkali. Similar cures are recorded in Anderson's Recreations, as having taken place in Pondicherry in 1798 and 1799. About the same time my much esteemed friend Mr. Peale, of Philadelphia, added a living rattlesnake to his valuable museum, and invited physicians and others to subject animals to its bite, with a view of determining, by subsequent experiment, the comparative merits of the different remedies commonly recommended for obviating the effects of the bites of venomous animals. The result proved, that the volatile alkali was entitled to a decided preference. Possessed of these facts, I have for some years past embraced every opportunity for ascertaining, by experiment, how far the bites of snakes, or the stings or bites of other venomous animals, might be alleviated by this powerful remedy. A few cases have occurred in my practice, both from the bites of snakes and from the stings of spiders, in each of which the result equalled the recorded beneficial effects of similar applications on the other side of our globe. The last was the case of a negro fellow, by name Stepney, who on the 3d instant was bitten by a rattlesnake at Health Farm, on Charleston Neck. I was not present; but my provisional directions were so punctually carried into effect as to save a valuable life, that in all probability would otherwise have been lost. The experiment was decisive; for though no other application than the volatile alkali was used, the most excruciating agonies of the patient were speedily relieved, and a complete cure obtained in a few days. From full conviction of the efficacy of the remedy, I recommend to planters, and others exposed to the bites of snakes, to have always at hand six or eight ounces of the strongest spirits of hartshorn, well secured; and in case of a person being bitten by a snake, to give him 60 drops thereof in water, every six or eight minutes, till his pains begin to abate, and then to lengthen the interval between the doses in proportion to the abatement of the pain. The wounded part should also be frequently washed with the same medicine. The spirit of hartshorn is particularly designated, because the planters are

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are acquainted and generally provided with this medicine, and can command it in all seasons and places; though it is inferior in strength, and slower in its effects, than strong caustic volatile alkali, yet experience has proved that it is sufficiently strong to effect a speedy and complete cure.

Oil should not be given before or during the exhibition of the hartshorn; for it would weaken its effects, or combine with it and make soap. That the volatile alkali, properly administered, will in a short time cure the bite of any snake, or the sting of a spider, or any other venomous insect, is a medical fact as well established as that the Peruvian bark will cure an intermittent fever. There are exceptions to all general rules, and probably more to the latter than to the former. With the exception of a few extreme cases in which the bite proves instantly mortal, either from the uncommon virulence of the poison, the peculiar nature of the part which it is applied, or the operation of fear, the volatile alkali may be depended on to afford a certain and speedy cure. Of this we have authentic evidence in the books referred to above, which state cures performed in the East Indies by means thereof, even in cases where the poison had advanced so far that mechanical force was necessary to unlock the jaw before the medicine could be introduced.

Such persons as have no access to these authorities, or are slow to believe the records of distant events, are requested, for their further satisfaction, to inform themselves of the particulars of the cure beforementioned, as having taken place on Charleston Neck since the commencement of June, 1803. On inquiry they will find that the most alarming symptoms were removed in a few hours by the unassisted operation of this single remedy.

That volatile alkali should always succeed is not to be expected; but in nine cases out of ten its failure, on a proper examination of every circumstance, would probably be found to arise from one or more of the following circumstances: either the medicine given as volatile alkali was spurious, or inferior in its kind, or weakened by being frequently opened, or insecurely corked; or that it had been given in too small doses, or at too long intervals. Such persons as design to give it a trial are requested to be minutely attentive to each of these particulars.

As the hydrophobia following the bite of a mad dog has resisted all the remedies hitherto used for its cure, it is submitted to physicians whether, on principles of analogy, it would not be well to try the effects of volatile alkali, rather than

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than resign a patient to his fate, or repeat the medicines which on frequent trials have always been found unavailing? A doubtful remedy is better than none. He who does not do all in his power to save a life, especially one committed to his care, is guilty of a species of murder.

I shall be obliged by information of the result of any experiments that may be made in consequence of this communication.

LETTER *to* Dr. RAMSAY, *in Consequence of his* OBSERVATIONS *on the* BITE *of a* SNAKE *cured by* VOLATILE ALKALI. *By* BENJAMIN BARTON, M.D. *of Philadelphia.*

DEAR SIR,

I Have seen your Observations on "the Bite of a Snake cured by Volatile Alkali." I rejoice to find that you have undertaken the investigation of a subject so important as is the one on which you have favoured the public with the result of your experience. I hope you will pursue the inquiry, as I am well persuaded that we are in want of something much more efficacious as a cure of the evil effects induced by the venom of the rattlesnake, and other serpents, than any of the many vegetables which have been recommended to the public in such extravagant and unqualified terms.

Ever since the spring of 1801, I have paid a great deal of attention to the effects of the venom of the rattlesnake. I have had a number of these reptiles, both old and young, under my immediate care, and have caused them to bite many and various species of animals, with the view to collect materials for a history of the poison. My experiments have satisfied me, that the venom of the rattlesnake is one of the most deleterious substances with which we are acquainted. In many instances, the effects of the poison were observed *almost instantaneously*; and so rapid is the progress of effects, that several of the bitten animals, such as rabbits, dogs, &c. died in about thirty minutes. I may add, that a few weeks ago a man died in Jersey in twenty-seven minutes after he had been bitten by a rattlesnake.

The infirm state of my health, which compelled me to leave the city last summer, prevented me from pursuing my experiments as I had wished to have done; and the death of

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of the only remaining two of my snakes, by the cold of the succeeding winter, has put it out of my power to do any thing on the subject this summer. But I shall not neglect to resume the inquiry next spring, as I have the promise of a number of living snakes; and I shall take great pleasure in making you early acquainted with the result of my experiments.

One of the objects of my inquiry is the discovery of the best means of preventing or of curing the disease occasioned by the bite of the rattlesnake, and others of our venomous serpents, such as the copper-head, &c. I feel no disposition to exhaust any of my time in experimenting with all, or even a twentieth part, of the many vegetables which have been praised and employed for these purposes in different parts of the United States. Many of these are unquestionably inert, and I think I have elsewhere shown how they have acquired their reputation. I am far from denying that some of the vegetables to which I allude are deserving of a *portion* of the praise which has been bestowed upon them. The seneca snake-root (*polygala senega* of Linnæus) is, without doubt, a plant of great powers, and may be worthy of our attention as a remedy against the bite of venomous serpents. You know that among the Indians this plant has sustained a high reputation in this respect. One of my correspondents (Mr. Samuel Preston, of this state,) has communicated to me a case which is worthy of being mentioned. In the year 1798, a man, whilst he was mowing, was bitten by a rattlesnake in the little toe of his foot. Almost instantly he was seized with a pain in his breast and eyes. The leg became greatly swollen, and violent symptoms of a genuine tetanus ensued. The seneca, which was at hand, was boiled in milk, and the patient drank large quantities of the decoction, at the same time that the root, in the shape of a poultice, was applied to the part immediately wounded. The medicine threw him into a profuse perspiration; in a short time all his spasms subsided, and at the end of two days he was able to return to his occupation of mowing again.

This case, to which I have alluded in my *Elements of Botany*, part iii. p. 105, is certainly an important one, as I think it plainly shows that the seneca is a medicine well adapted to *some* cases of the bite of a rattlesnake. I rather regret that, in the work just mentioned, I should have used the following words, when speaking of the medicine:—"Its great virtues as a remedy for the bite of the rattlesnake may, I believe, be safely called in question." I am

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far, indeed, from supposing that it is an infallible medicine or specific: on the contrary, I have not a doubt that it would fail to effect a cure in many cases of the bites of venomous serpents. What relief could we expect from it, or indeed from any thing else, in cases (such as the one in Jersey) where death was induced in less than half an hour?

I shall not omit to try the effects of the volatile alkali. Hitherto I have not used it, because I had imagined that correct experiments had nearly robbed it of all its former reputation. It appears from the Abbé Fontana's highly interesting work on *poisons*, that this alkali, whether externally applied or internally exhibited, was of no use in diminishing the activity of the venom of the viper, which is so very similar to that of our rattlesnake. One quotation from the Italian philosopher's work I beg leave to lay before you: "I had (he says) several animals, such as hens, rabbits, guinea pigs, &c. bit in the leg, and some minutes after made deep and extensive incisions into the wounded parts. I washed these incisions with pure volatile alkali, and covered the legs with linen bandages. I got ready an equal number of animals of the same size, and of the same kinds, to serve as a comparison. These were likewise bit in the leg; but I neither made incisions, nor applied to them the volatile alkali. The result of twenty-four experiments was not favourable to this medicine applied to the incisions, and the violence of the disease was even more considerable in the former than in the latter. Upon the whole, Fontana is of opinion that his experiments "not only demonstrate the absolute inutility of the volatile alkali against the bite of the viper, when applied externally; but," that "they at the same time prove still farther that it cannot have a direct and specific operation when it is even taken internally."

I do not pretend, Sir, to decide between your experience and the experiments of Fontana. I can, in great sincerity, assure you that I repose much confidence in your caution and accuracy in conducting medical inquiries, and in your candour in relating your observations. But do we not very often describe effects, both good and bad, to our remedies, which those remedies have not produced? Do not our patients sometimes recover from violent diseases without the aid of any medicines whatever? Does not Nature (that is, the powers or tendencies of the constitution) very frequently cure a gonorrhœa? Nay, do we not find the same powers, in some instances, sufficient to cure the malignant disease of yellow fever?

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The result of all my inquiries relative to the poison of serpents is very favourable to the opinion, that the instances of spontaneous recovery from the influence of these poisons are numerous. Without admitting this position as a fact, what satisfactory explanation can be offered of the many recoveries from the bite of the rattlesnake, when the vegetables that were applied externally, or exhibited internally, were, if not nearly inert (mere *nutrientia*,) at least endued with the most opposite powers? Thus the bulb of *hypoxis erecta* (which grows abundantly in Carolina and other parts of the united States) is by many persons deemed a sovereign remedy against the bite of the rattlesnake. But this bulb, which I have often eaten, is almost as mild and inert as boiled rice.

That an animal which has been bitten by a rattlesnake, whose poison has induced most violent symptoms, such as acute pain, fever, and even palsy of the extremities, shall completely recover from these symptoms without the aid of any medicine whatever, is a fact which is familiarly known to me from my own experiments.

Permit me to suggest to you the propriety of employing active emetics, so as to excite full vomiting, in some of the cases of the bites of serpents that may come under your care. The very striking analogy which subsists between the effects of the venom of the rattlesnake and those of the poison inducing malignant yellow fever, has led me to suspect that emetics might be useful in the former as well as in the latter of these cases. Fontana found the tartar emetic useful in cases of the bite of the viper; and Dr. Boys, an intelligent physician who is settled at Staunton in Virginia, informed me (in my visit to that place last summer) that he had found emetics, so managed as to excite both puking and purging, *more useful* than any thing else in removing the symptoms originating from the bite of the copper-head snake, which is not less venomous than the rattlesnake.

July 23, 1803.

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Examination of the Urine discharged by Patients affected with Diabetes. By Messrs. Nicholas and Guedeville, of Caen.

Physical Properties of the Diabetical Urine.

1. It has no smell, but a saccharine taste. 2. It is turbid and whitish.

Analysis by Means of Reagency.

1. It changes the blue colour of the tinctura heliotropii into violet blue. 2. Nitrat of silver occasions a caseous precipitation, but soon after this becomes violet, and the liquor is rendered clear, of a pale yellow colour, and acquires no smell. 3. Lime water renders this urine instantly turbid, disengaging a slight smell of ammonia, and some time after a white flaky precipitate is formed, consisting of phosphat of lime, after which the liquor becomes as clear as the purest water. 4. Concentrated sulphuric acid changes the colour of diabetical urine into a rose colour, but occasions no considerable precipitation. 5. Sulphat of mercury troubles this urine and makes a reddish precipitate, which is partly kept swimming in the liquor. 6. Kali occasions a far less precipitation and disengagement of ammonia, than it does in healthy urine. 7. Muriat of lead imparts a milky colour to it; and when the precipitate has subsided, the liquor remains quite clear.

Analysis by Evaporation.

On exposing diabetical urine for about six weeks to the accession of air at a temperature of from 10 to 12°, it became turbid the first six days, depositing a white flaky substance which proved to be albuminous matter. The clear liquor had an acid smell and taste, and strongly reddened the blue vegetable colour. The acid urine perfectly united with a solution of carbonated kali without much effervescence, and on having filtrated and evaporated the liquor, acetite of kali mixed with a small quantity of phosphat of kali was obtained. On evaporating four pounds of diabetical urine by a gentle heat, four ounces and a half of extract, of the consistency of honey, were obtained, which had a brown colour, and the smell of burned sugar. Ten parts of this extract being mixed with four parts of muriat of barytes and one part of charcoal powder, were well dried, and submitted to distillation in a retort,

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tort, but not any trace of ammonia or phosphorus could be perceived, nothing except carbonated hydrogen gas and a black oil of a disagreeable smell was disengaged. On adding four ounces of alcohol of 35° to one ounce and two drachms of inspissated urine, a yellow clear liquor was obtained, which however, twenty-four hours after, deposited a flaky greyish matter, weighing twenty grains, of a saline and rather saccharine taste. Lime water disengaged a slight smell of ammonia from it, and sulphuric acid blackened it, which experiment was attended with disengagement of sulphurous acid; all which intimates the presence of albuminous matter in the residuum. Part of the above mentioned extract, distilled with nitric acid, yielded oxalic acid and a small portion of phosphorus acid, and during this operation a great quantity of nitrous gas was disengaged. Four ounces and a half of the extract were diluted with one pound of distilled water, to which was added half an ounce of dry yeast. This mixture being exposed to a temperature of 15°, twenty-four hours after, the liquor began to ferment, whereby a great quantity of carbonic gas was disengaged. When the fermentation was finished, the author submitted the liquor to a distillation, by which ten ounces of a weak spirituous liquor were obtained, the smell of which was by no means agreeable. By rectifying, it yielded four ounces and two drachms of alcohol of 32°, which however retained the same disagreeable smell.

In order to separate the sugar from this urine, four ounces of the inspissated urine were diluted with one pound of water, and boiled, with the addition of one ounce of blood. After the liquor had been suffered to settle it was separated from the sediment, and clarified by the white of an egg. It was then evaporated to the consistency of a syrup, and exposed to the atmosphere; eight days after, small brownish crystals were perceived, which were neither so regular nor so hard as those of sugarcandy. When the liquor had been poured into an earthen vessel, it became dry five days after, resembling in form and colour common powdered sugar. Some experiments made on this substance proved it to be only saccharine mucilage, as it was decomposed by caustic kali.

The results of these different experiments are the following: 1. The urine discharged by persons affected with diabetes contains neither urée, uric acid, nor benzoic acid. 2. Ammonia and phosphats are present, but in a very small proportion. 3. It is capable of undergoing the vinous and acid fermentation. 4. It yields accordingly alcohol and acetic acid. 5. It contains saccharine mucilage.

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The authors likewise examined the blood of diabetical patients; and from their experiments it appears, that the blood of such persons contains no saccharine mucilage; that the fibrous matter is present in a smaller proportion; and the serum abounds more than in a healthy state.

The saccharine mucilage is composed of oxygen, hydrogen, and carbon; whereas the urée contains a great proportion of azote, the absence of which occasions the generation of saccharine matter, and the diminution of the fibrous substance. When a due proportion of the azote is restored, the urée will again be generated and the fibrous substance augmented. For the cure of diabetes it is therefore advisable, first, to order a diet of substances which contain much azote, namely an animal diet; and, secondly, to prescribe those remedies which are chiefly composed of azote and phosphoric acid, as ammonia internally as well as externally; phosphats and phosphorous acid; and, finally, to remove the morbid state which prevents the due animalisation of the aliments.

New Method *of preparing* corrosive Sublimate *(hyperoxydated Muriate of Mercury) in the* humid Way. *By* M. L. Von Schmidt Phiseldeck.

It is well known how much apothecaries, desirous of preparing their own medicines, are indebted to Mr. Westrumb, for having furnished them with a method of preparing corrosive sublimate without being exposed to the dangerous vapour it emits during the sublimation. For some time past I have employed myself, merely from scientific views, in preparing corrosive sublimate according to this method. But however much I may be sensible of the advantages of this process, I cannot help regretting the loss sustained in the nitric and muriatic acids, which in general cost so much trouble and expense before they can be obtained pure. I reflected a long time on the means of avoiding this loss, and at length discovered a process much more economical than that of the chemist Hameln. The question was, to dissolve the mercury in the cheapest concentrated acid (this acid, without doubt, was the sulphuric acid,) and to present to the oxyd of mercury the muriatic acid without having separated it from its alkaline base. I resolved then to prepare a solution of mercury in sulphuric acid, and to decompose the sulphate of mercury by muriate of soda. I then hoped

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hoped that I could easily separate the two salts that were formed by crystallization, as the sulphate of soda for its solution took only eight parts of cold water, whereas corrosive sublimate takes 162; but I found that after the first crystallization the two salts mixed, and that no other means of separating them remained but by alcohol. I shall pass over in silence, the operations which were attended with more or less success in this point of view, and describe only the process which I definitively adopted.

I introduced into a tubulated retort two ounces of mercury and three ounces three gross of concentrated sulphuric acid; I then adapted to the retort a receiver, without luting it, and made a pretty strong fire. During the solution there was disengaged a very considerable quantity of sulphureous gas. When nothing remained in the retort but a white mass, I added a solution of five ounces and a half of marine salt in six ounces of water, and exposed the mixture to strong ebullition for half an hour. A complete solution took place. I filtred the liquid while it was in a state of ebullition, put it into a retort, and distilled it to dryness. On the remaining mass I poured sixteen ounces of alcohol, and caused it to digest for some hours. I then decanted the liquid from off the residuum, filtrated it again warm, and put it once more into the retort after I had washed it, taking care not to spread any of it in the neck of the retort, and distilled it to dryness. I must here remark, that the distilled liquid, which at first had the colour of Malaga wine, assumed, after the solution was concentrated, the colour of water de Rabel; and the saline mass, after the complete evaporation of the alcohol, was exceedingly white. Lime-water made no change in the colour of this liquid.

I poured over the mass in the retort twelve ounces of water; I boiled it to solution, and, having filtred the liquor, exposed it to crystallize. Very beautiful crystals in the form of elongated prisms were deposited. I then poured over the residuum eight ounces of new spirit of wine, and again obtained a considerable quantity of corrosive sublimate. The distilled liquid, after being rectified on half an ounce of potash, was perfectly pure.

By employing this method, corrosive sublimate, in my opinion, will cost one-half less than by Westrumb's process. Sulphuric acid costs only one-third of what the nitric acid does; and there is no comparison between the price of pure muriatic acid and that of marine salt. I therefore flatter myself that this method will meet with a favourable reception.

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Remarks *on the* Efficacy *of the* Extract *of* Hemlock *in the* Cure *of* Tetters, *and particularly in the* Cure *of an inveterate* Disease *of the* Bladder. *By* Louis Valentin, M.D. *late Physician of the French Forces in St. Domingo.*

M. DAVID, an inhabitant of Cape François, 77 years of age, was tormented, for more than three years, by a strangury, for which he had taken the advice of many gentlemen of the faculty, and had used unsuccessfully a great variety of means, both internal and external, and finally bougies were introduced into the urethra. At length he called for my advice, about the latter part of the year 1791; and, amongst the exact accounts of his life, he observed that, twenty-eight years before that period, having been obliged to go to France, on account of an obstinate abdominal dropsy, he abstained entirely from all kinds of drink during twenty-five days on board of the ship, eating only, for his sustenance, some dry food; that when he landed at Bordeaux his belly was very much lessened, and in a short time after the cure was completed without any medicine. Some time after his return to St. Domingo, at the quarter of Dondon, near Cape-François, where his estate was, the dropsy began again to appear; and, in a second voyage, he was thoroughly cured by a methodical treatment under a French physician; but he was very sorry to be obliged to confess that he had abstained from drinking water only fifteen days in his passage. Thereupon he concluded that, being able to do in some degree without substantial food, he was determined to take any advice that I should give him, in order to alleviate the severity of his sufferings.

M. David had almost always lived a regular life, and his blood had never been infected by the venereal disease. His constitution was dry and lean. Having examined his disorder, I saw him making water by drops, with burning pain in the urethra, chiefly in the neck of the bladder; and, during one hour, by reiterated contractions and efforts, he never discharged but one, two, or three spoonfuls of urine. He was afraid of drinking any more, lest it should disturb his rest, of which he had been so long deprived. No obstacle was in the canal, no tumour in the rectum intestinum, nor in the prostate gland. The hypogastric

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gastric region was nearly in a natural state. A looseness now and then disturbed and weakened him much.

There might be two immediate causes suspected — a stone in the bladder, or a particular disease in the membranes of that organ. Having introduced a sound, and after exploring attentively, I discovered no extraneous body; but I could not turn about my sound in its cavity as in other men. I found every where by the end of the sound a resistance as in a pocket of leather. I thought that a catheter of elastic gum might be useful in order to let out the superabundance of water, which the bladder could not hold without the most acute pain. But it was impossible for the patient to endure the catheter even two hours, notwithstanding his extraordinary courage. The half baths, the emollient topics, and all drink or other lenient medicines whatever, had never relieved him but for a moment.

Amongst my inquiries about remote causes of an old disorder, I learned that he was subject to the erysipelas and tetters, and showing me his left leg, I perceived a great mark of a ring-worm upon the inside of it, which itched so extremely that it caused him to scratch off the skin. Instructed already, by experience, in the effects of the repulsion of some acrid humour from the skin, and even of the gout and rheumatism upon the *viæ urinariæ*, I was induced to believe that his bladder could be affected by nothing but the humour of the ring-worm; that the membranes of it were thickened and hardened, and the size of the cavity decreased considerably in proportion to the length of its pathological state; and therefore the patient could not delay to evacuate a small quantity of urine, the contact of which provoked an irritability already much increased.

I began the cure with two pukes of ipecacuanha root, as much on account of the lax as to excite a shake from the centre to the circumference. Afterwards I ordered the extract of hemlock, increasing every day the dose, with six, eight, or ten grains; soon after it was brought up to a drachm. Then I continued the same weight more than a month, until he got rid of a great propensity to sleep (which he felt every day after dinner), and of some convulsive motions in his lips. The dose was after that increased to three drachms every day. I then perceived that the bladder kept in a great quantity of urine, and its extreme sensibility was much abated. However, an abounding excretion of spittle, with an inspissated mucosity, with-

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out any affection, either of the throat, the tonsils, gums, &c. was an inducement to diminish the dose for a short time.

Our patient drank also the juices of some of the depuratory herbs, but the diarrhœa coming on, he forsook them. I ordered to renew the dose, by degrees, to three drachms. He endured it perfecly well; and, in the sight of many, he evacuated without interruption, and almost without pain, a large tumbler full of urine. He felt that the bladder was more extended, and that he could contain his water a long time. He went from home with a design to take a walk, what he had not done for three years past, being obliged to stand every moment, in order to make a few drops of water.

The ring-worm of the leg and the itching appeared no more. I had fixed a cautery under the knee of the same side, but it never discharged any matter. All the irritating and stimulating topics on the tetter, though in a small quantity, brought their action into the bladder and the canal of the urethra. I forsook them to wash only the leg with the decoction of althea.

In fine, sleep and the other functions of that age (the appetite excepted) were restored, after the use of the hemlock, in one year. In computing exactly, in every particular, the quantity of that extract, we found that M. David had taken sixty-four ounces of it, or four pounds.

Some time after this cure, an insurrection happened in the town, in which one party attacked another. M. David being quietly seated down at home, near the door, St. Simon's Street, was, by chance, struck in the breast, and killed immediately, by a gun-shot, which was designed not for him but for a horseman who was escaping. I seized upon this occasion to open the dead body, and I called Dr. Baradat with a design to examine the bladder with me. We found it sound, smaller than in a natural state, and its membranes but a little thicker about the lower part.

Reflections *on the* Extract *of* Hemlock (*Conium Maculatum.* Linn.)

We see, by the above observation, not only the good effects of this remedy, but also the strong dose which the patient has borne without inconvenience (the inodorous salivation being excepted), when three drachms every day were taken. I have always ordered strong doses of it, and

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it never produced that last effect. It might, perhaps, be said, that the extract of hemlock contained mercury; but it is wrong, for no experiments have given any proof on that subject. It was fresh and well chosen, and appeared to be very good, being procured from Messrs. Saussay and Brus, apothecaries at the Cape. The same remedy has never produced that effect in any other instance; having made a copious and successful use of it in the cure of obstinate tetters in the West Indies, some time together, with the strained juices from herbs of a soapy and nitrous quality.

However, I have recently seen at Norfolk, in Virginia, a person to whom I prescribed the extract of hemlock, by degrees to one drachm per diem, casting up a great deal of spittle, afflicted with a sore throat, sore gums, tonsils, &c. Gold, when rubbed with that medicament, would become white immediately, and I discovered easily the quick-silver. It was a mixture of Bellost's pills and a small quantity of extract.

Every physician knows how exceedingly the extract of hemlock has been praised by Dr. Storck for the cure of cancers; but numerous experiments have proved its insufficiency, not to say its inefficaciousness; and its virtues in those cruel diseases are now come to nothing, as well as the praises and boastings of its admirers. It is not the case as to the diseases of the skin, ulcers, and some oppilations issuing from them, and even sometimes from a venereal disease, after an unsatisfactory treatment with mercury. The climbing morel *(solanum scandens seu dulcamara)*, so celebrated by Dr. Carere, of Paris, and lastly by Dr. Otto, from Gotha; the bark of the pyramidal elm, by Dr. Banau; the soap-wort *(saponaria officinalis,)* by Dr. Retz; the antimony of Jacquet; and a great many other chemical compositions, which, nevertheless, are not to be rejected, seem not to produce so good effects as the mere extract of hemlock, especially when its use is combined with a vegetable diet and exercise. All animal and greasy food, fit to increase or maintain the bilious plethora, ought to be interdicted; for the remote causes of those disorders exist undoubtedly in the organs of digestion, which have a great connection with the skin, but essentially in the liver. Therefore Galen says judiciously, "*Herpetes biliosus procreat succus.*"

This remedy must have an excellent effect, taken in sufficient doses, and continued a long time. At St. Domingo I joined with it the cold-bath; I repeated, from time to time,

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time, vomits with tartar-emetic, preferring often a drink with vinegar, sugar and water, to that of sarsaparilla decoction. Sweats are in those cases always salutary, but they must not be provoked with hot and acrid sudorifics. Among the five kinds of tetters with which we are acquainted, the *herpes pustulosa et squamosa,* and the *herpes viva et suppurans,* are there the most common; and often many people are cured by changing the climate only.

The desiccative and repelling ablutions and liniments are sometimes employed successfully, but it is only about the end of the treatment, and they must be prescribed cautiously.

Permit me to observe, that the alkali volatile fluid, and the sudorific syrups of mercury, which some surgeons of St. Domingo make use of, have frequently produced pernicious effects. Mercury is very noxious when there is not a venereal taint; and those ring-worms do not originate often from it, as is commonly believed.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE subject of Gout having lately been brought forward in the Medical and Physical Journal, in consequence of the treatment proposed for its cure by Dr. Kinglake, I shall make no apology for troubling you with the following observations. It is not my intention to enter into the controversy that has taken place between Dr. Kinglake and a Constant Reader, but merely to state facts as they have occurred to my knowledge. The application of cold water, with a view of reducing morbid excess of temperature, does not appear to be a new remedy, but on the contrary; and, like many other remedies for disease, has been laid aside, and after a time resumed.

I have always been in the habit, since I began medical practice, of using cold water as a topical application in local inflammation of the joints; but since Dr. Kinglake's communications, I have employed it in every case of acute rheumatism, as well as gout, which has fallen under my care, and am happy to say with uniform success, in cutting short the disease. Many instances could be produced me to prove, that the application of cold water is not only

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only a perfectly safe remedy in gout and rheumatism, but a highly beneficial one. The following is a case of acute rheumatism, in which it was used with decided advantage.

J. Stockdale, aged twenty-three years, was attacked in January last with severe febrile symptoms, pain and swelling in the ancles, knees, and wrists; the pain was very violent, particularly at night, and when in bed. He had been ill a week when I saw him, and had been attacked on the day previous to my visit with a violent fixed pain under the left breast, extending to the clavicle, attended with cough and difficulty in breathing; he expectorated a considerable quantity of bloody mucus. He was ordered to take ten drops of the tinctura digitalis every four hours, in a glass of cold water, and fifteen grains of pulv. ipecac. comp. at night at bed-time; the joints were directed to be kept constantly wet with cloths, dipped in a lotion composed of water, coloured with tinct. lavendulæ composita. On visiting him the next day, I found he had rested better, was freer from pain and the swelling somewhat diminished, but, as his breathing was still impeded and cough troublesome, it was deemed proper to apply a blister to the side. The tinct. digitalis, and pulv. ipecac. comp. were continued as before, and the red lotion applied to the tumefied parts, which he was eagerly desirous of having renewed every few minutes, as it made him so comfortable and easy. He went on mending rapidly, and in the course of seven or eight days from my first seeing him, the swelling and pain had subsided, his fever and cough had left him, and he had not a symptom of disease but general debility, for which he took half a drachm of bark three times a day. It is to be remarked that this patient had been seized with this disease about six weeks before, in a slight degree, from which he soon recovered, but having imprudently exposed himself to wet, brought on this second attack.

From a variety of cases, in which cold water has by my direction been applied to arthritic inflammation, I shall deem it necessary to state only one, as they would all tend to establish the same point, viz. the efficacy and propriety of the remedy. Mrs. B. between fifty and sixty years of age, has been subject to the attack of gout, in one or both feet, for several years. She has, usually, had two or three fits in the year, and those generally tedious and very painful ones. In last December she was attacked with inflammation and swelling in both feet; the pain was very severe. I saw her the day after the coming on of the fit, and proposed the application of the red lotion; but, as

Mrs.

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Mrs. B. had always been in the habit of applying warmth, by flannel, &c. she for some time objected to the application of cold, and it was no easy matter for me to overcome her prejudices; however, she consented, and cloths well wetted were wrapped round the feet and kept constantly upon them; the almost immediate effects of which were, an abatement of the pain, and by continuing the application she was in three days completely cured of the complaint, a little stiffness and debility of the foot only remaining for a few days more. The patient was, as may be readily conceived, highly pleased with the remedy, and not a little surprized at its beneficial influence in so short a period.

Harleston, Norfolk, March 6, 1804.

I am, &c.
THOMAS TAYLOR, Surgeon.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I Have been a constant Reader of your Journal since its publication, and have frequently been highly interested with many of the very useful papers it has contained; but I must confess to you that, within the last two years, its productions have appeared to me less valuable, and have tended more to embarrass than elucidate the Science of Medicine. Instead of liberal discussion on difficult points of pathology, which might lead to useful discovery of means that might alleviate or remove disease, it would seem that victory in controversy has veiled the sentiments of many of your correspondents, and led to an illiberal and ungentlemanly conduct.—What can be more gratifying than the plain and unadorned relation of facts, or opinions, which accompany the details of the well-informed and modest mind? I need not refer to verbal quotations to strengthen my assertion; your various numbers of late will singly supply abundant proof of its truth; but your last, in particular, contains a paper which shows such determined marks of hostility, and a determination to subdue, that I think none of your readers can approve the selfishness it betrays, or assent to the opinions which it unfolds.

If your correspondents would honestly detail to you the many

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many varieties of disease they meet with in their practice, if they would fairly state to you how inefficient, on many occasions, are the most powerful means, where frequently the most trifling remedies are followed with success, great advantages might accrue to society; and medicine, on most occasions, instead of being a complicated, would be rendered a machine of easy movement. Theories are of little value if they do not lead to successful practice; and the patient may be dead before this or that opinion shall decide on the remedy for his welfare. Of what worth can it be to me, or my surrounding friends, whether apoplexy depends on effusion, or a defective nervous energy, if the means adopted for its removal avail nothing, and one I highly esteem is sent to the grave? Ingenious men have no difficulty in forming theories to explain difficult appearances; but I would enquire, whether our knowledge is sufficiently distinct of the operations of the nervous system, and the relation between this portion of our frame, and the other parts of the system, to warrant us in deviating from the path of successful experience?

With respect to apoplexy, I have seen many cases where bleeding has quickly sent the patients to the grave. I have also seen emetics given with no immediate bad effect, but where the patient has afterwards languished in hopeless debility for years. I have also known where stimulants have been given, and where neither bleeding, nor vomiting, nor purging were employed, that the patient, who was in years, from not being able to speak distinctly, or move even a finger, has so far recovered as to walk round her premises, and converse with her friends. It has always appeared to me a necessary consideration, on being called to an apoplectic patient, that my views of the cure were not so much to be directed by the disease being apoplexy, as in directing my mode of cure to the removal of habits, or their consequences. I am fully persuaded if more attention was paid to this circumstance, more lives might be saved; and, though the lost energy of the system might never be restored to its former vigor, yet that we might so far recover its tone as to make life move on with ease, if if not with delight. From a considerable share of experience, I know well that the stomach will direct by its feelings the comfortable movements of the whole frame, and I am fully persuaded it has great influence in producing the apoplectic state, by uneasy irritations existing in it. I know well that tea for breakfast has in many led to feelings which have approached the apoplectic state. I know also

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also that the drinking of rum has generated an acid in the stomach, which has produced an irritation there that has led to insensibility for a considerable time. I need only appeal to those who accustom themselves to take hot water with spirits at bed time, and make a breakfast the next morning of tea, to be informed how frequently they have languished before dinner, and how often they have sat down to a plentiful repast without being able to eat. Nor need I ask them how often their minds have been wavering, and discovered a temporary absence of thought, and a suspension of its other faculties? What is this but an approaching state of apoplexy, or a diminution of feeling? In such instances, I conceive, neither repletion, nor inanition, have any thing to do in producing apoplexy, but that irritations, excited in the stomach by peculiar means, are the sole cause in ninety-nine instances of a hundred.

I have something also to state to you on the gout, and I wish my experience could assure you of its removal by any means, if there be a want of resolution. Habit so completely subdues resolution, that I have met with very few, who after a time have not given way to inclination, and whatever good has been done, has very shortly been undone by reverting to former modes of living, and gout has returned with ten-fold violence. But I can relate the history of others, whose steady perseverance in plans laid down for their good, has amply rewarded their resolution, and though the gout had attacked them with the utmost violence, they continue to escape its painful and subduing efforts by their well judged prophylactic plan. Gout appears to me to be a general disease, and not to be cured by local means. In most gouty persons there is a highly irritable nervous system, whose balance with other parts of the body is destroyed, either by artificial means, or a defective structure. Where the latter prevails, little good is to be done; but in the former state of disease, every advantage may be derived from diet, and the employment of means which allay irritation through the medium of the skin. I know a gentleman, whose father died a martyr to the gout, who has himself been subject to its most violent attacks, who by resolution in adhering to a plan of diet recommended to him, has been almost entirely free from it for several years. This gentleman, from a belief that a bottle of wine after dinner, with ardent spirits and water, or punch after supper, would completely remove the gout, found by painful experience that he only increased its tendency

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tendency to return, and at length paralytic symptoms showed themselves. Since that time, which is now some years since, he has been exceedingly regular in his diet, and he enjoys better health than he had done for many years.

This gentleman is a striking instance of gout, as well as apoplexy, being connected with a peculiarly irritable state of the stomach. He can induce gout at any time by cucumbers, or a few grapes, or by eating any thing that has a tendency to produce acidity. I have attended another gentleman, who is so extremely irritable, and whose father was very gouty, who has had several attacks of it, from drinking a few glasses of wine, or brandy and water, and so strong is its tendency to recur, that the most trifling deviation from the most abstemious regimen, makes him feel its return. His persevering resolution in regimen is amply rewarded by good health and activity. Is it reasonable to suppose, that in either of these cases, with many others I could enumerate, that the local application of cold water would really cure the gout, if no attention was paid to the general habit of the patient? It appears to me so contrary to all sound experience, that medical men must wish for farther proof, before such a remedy can be generally employed with confidence, or employed at all without great hazard, if general means are not at the same time enjoined.

MEDICUS.

On Meteorical, Stony, and Metalline Substances; *by Mr. Klaproth, of Berlin.*

A VARIETY of facts has now rendered it indisputable, that stony and metalline substances have fallen on the earth at different times, however miraculous such a phenomenon may appear, and however it may differ from what is observed as the common order of Nature. The physico-chemical properties likewise which these substances possess, apparently declare their identity, and are capable of throwing some light on their origin and mode of formation. Any contribution, therefore, towards explaining so remarkable a subject must be acceptable to the philosophical naturalist. Mr. Klaproth, whose name ranks high among-t the modern chemists, having obtained a sufficient quantity of those substances, which have fallen

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on different parts of our globe, took an opportunity of submitting them to a chemical analysis, the results of which he communicated to the Royal Academy at Berlin, and are as follow:

I. *Analysis of the Meteorical Stones from Siena.*

The account of the curious phenomenon by which these stones were thrown on the earth is sufficiently known. The accident happened in June 1794, near Siena, in Italy, where, about seven o'clock in the evening, a small dark cloud was perceived in the sky, which otherwise remained clear. Soon afterwards a violent explosion took place, attended with lightening, which resembled the discharge of a battery. At each explosion a considerable motion was seen in the nebula which surrounded the cloud, and a great quantity of stones fell down, most of which were small, but some were found of seven pounds weight. The force of the fall was so great that it occasioned a hissing noise in the atmosphere, and the greatest part of the stones was found buried several feet deep in the ground, which had become soft by the preceding rains.

Mr. Klaproth received several specimens of those stones; they were all covered with a thin crust of a grey blackish colour, without gloss, and of a rough and uneven surface. When these stones are broken, they show a very dissimilar texture; the chief substance, however, is ash coloured, and has the appearance of hardened argilla, but not the least smell of it. The particles that are discovered in it, consist of four different substances, the most remarkable of which is iron in a metallic state, found particularly near the crust in form of small eliptical grains. They may be extended by means of a hammer, and the file stroke appears white and glossy. The second substance is martial pyrites, which is distributed in small particles and veins, and has a reddish-yellow colour. The third substance is mixed with the whole in a greater proportion, and consists of small bodies of various sizes, mostly flat and angular. They have a considerble hardness, a black, grey, or brownish colour, a conchoid fracture, and a small degree of lustre. Besides these small globular bodies are perceived, of a yellowish colour and a vitreous lustre; much resembling quartz without having its hardness. The whole stone has not the least similarity with any of the known fossils, or rocks. The specific weight is between 3,840 and 3,400.

1. Two

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1. Two hundred grains of the meteorical stone from Siena having been grossly pulverised in a glass mortar, the globules of iron were separated by means of the magnet, and weighed about six grains and a half, which were infused in muriatic acid, and the solution promoted by a gentle heat; during this process sulphurated hydrogen gas was disengaged, which arose from the small particles of martial pyrites that adhered to the iron grains. The clear solution had the green colour of emerald. On being precipitated, and afterwards supersaturated with caustic ammonia, the liquor became light blue. This liquor, after being separated from the precipitated oxyd of iron, was evaporated to dryness, and the remaining greenish salt ignited in a platina crucible, by which it was changed into a soft micacious powder, and gave a green solution with nitric acid. On adding to it carbonat of kali, three grains and a quarter of oxyd of nickel were precipitated; of which, after ignition, remained 1,60 gr. of a greyish-green oxyd of nickel, equal to 1,20 of metallic nickel. The oxyd of iron, after being ignited in a close crucible, appeared blackish, and weighed six grains and a quarter, which is equal to about four grains and a half of metallic iron.

2. The remaining 193½ grains of the stone, after being finely pulverised, were extracted by repeatedly infusing and digesting them with muriatic acid, whereby a disengagement of sulphurated hydrogen gas was occasioned. The colour of the liquor was straw-yellow. The greyish-white residuum being mixed with three times as much of caustic natron, and ignited, was softened with water, then supersaturated with muriatic acid, and afterwards evaporated to dryness. It was now again mixed with water, and the insoluble part separated by means of the filtrum, edulcorated, dried, and ignited. It weighed eighty-eight grains, and consisted of siliceous earth.

3. A precipitation was effected in the muriated solution when boiling, by means of carbonat of kali, which appeared dark green. Caustic ley, with which it was boiled, had no remarkable effect on it. After the precipitate had been sufficiently edulcorated, it was dissolved in sulphuric acid, and the solution evaporated to dryness; the salt thus obtained was strongly ignited, by which means it became pale red, and dusty. It was boiled with distilled water and filtrated; the residuum being edulcorated and dried was mixed with oil and made red hot in a close vessel, by

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which means fifty grains of a black oxydulated iron were obtained.

4. The remaining sulphurated liquor, when boiling, was decomposed by carbonat of kali, by which means a precipitate, consisting of magnesia, was obtained; it weighed forty-five grains and a half. The earth was soft and ash-coloured. On dissolving it in sulphuric acid, a black precipitate fell down, consisting of oxyd of manganese, which after ignition weighed half a grain. The liquor being freed from this oxyd became quite clear, and deposited crystals of sulphat of magnesia. The proportions of the constituent parts of the stone from Siena are in 100 parts as follows,

Perfectly metallic iron - - -	2,25
Metallic nickel - - - - -	0,60
Black oxyd of iron - - -	25,
Magnesia - - - -	22,50
Siliceous earth - - -	44,
Oxyd of manganese - -	0,25
Loss, including the sulphur and oxyd of nickel -	5,40
	100.

The quantity of the oxyd of nickel, as well as of the sulphur was too small to be accurately estimated: The presence of sulphur was decidedly indicated by the disengagement of the sulphurated hydrogen gas.—A piece of meteorical stone being put into an earthen crucible, was exposed to the fire of a porcelain furnace; where it touched the crucible it was found to have melted with it, but in the middle it was changed into a spongy dross of a moderate metallic lustre.

Analysis of a Meteorical Stone from Aichstaedt in Germany.

The account of this substance is related by Baron Hompesch as follows. "In winter, when the earth was covered one foot deep with snow, a labourer who worked in the fields saw this stone fall down, immediately after a preceding thunderstroke. He instantly ran to the place where it had fallen, and endeavoured to take it up, but it was so hot, that he could not touch it, and was obliged to let it cool. The stone was about half a foot in diameter, and covered with a black crust of iron. It greatly resembles the stone of Siena with respect to its external crust as well as the internal structure, but the particles of martial pyrites

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rites are changed into a brown oxyd of iron. It was examined in a similar manner with the former, and the constituent parts were obtained in the following proportion.

Perfectly metallic iron -	19,
Metallic nickel - -	1,50
Brown oxyd of iron -	16,50
Magnesia - - -	21,50
Siliceous earth - -	37,
Loss, including the sulphur and oxyd of nickel -	4,50
	100.

No trace of sulphat of kali, or natron could be discovered in this substance.

2. *Analysis of the Meteorical Iron from Sclavonia.*

This remarkable mass of metallic iron is preserved in the Imperial Museum at Vienna; it has the form of an irregular triangle, and weighs seventy-one pounds. The external surface is full of deep impressions, but the inside appears solid, like hammered iron, of a zinc-white colour and a considerable metallic lustre. The account of the phenomenon by which this mass was thrown down, is the following. On May 26th, 1751, about six o'clock in the evening, a fiery globe was perceived in the atmosphere near Itraskina, in the Bishoprick of Agram in Sclavonia, which, with a violent explosion, separated into two parts, and fell down in form of two twisted chains with a great noise. The larger piece, which first came down, had penetrated into the earth with such force, that it caused a kind of earthquake in the adjoining ground. It had occasioned a chasm three fathoms deep and one yard broad. The second piece weighed sixteen pounds, and had fallen in a meadow two thousand paces distant from the other, where it had occasioned a similar chasm. The Bishop of Agram, to whom the larger piece had been presented, sent it to the Imperial Museum of Vienna. Mr. Klaproth having obtained a piece from that mass, submitted it to a chemical analysis.

1. A hundred grains of this iron being infused in muriatic acid were put in digestion. The solution proceeded slowly without the least disengagement of sulphurated hydrogen gas; it had a beautiful emerald-green colour. In order to oxydate still more the dissolved iron, some nitric acid was gradually added to the solution till no

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effervescence ensued, by which means the green colour was changed into red-brown, and the iron perfectly dissolved.

2. The solution was supersaturated with ammonia, and the oxyd of iron, thus precipitated, was digested with weak caustic ley, edulcorated, dried, and ignited for half an hour. In this state of red-brown oxyd of iron it weighed one hundred and forty-two grains, which comes near to ninety-six and a half of metallic iron.

3. The ammoniacal liquor appeared light-blue, and being sufficiently evaporated, the greenish salt mass that remained was gently ignited, till no fumes were any longer disengaged. The residuum being dissolved in nitric acid formed a greenish solution, in which a precipitation was effected by carbonat of kali, and the oxyd of nickel thus obtained was ignited. It weighed one three-quarter grain, which indicates three grains and a half of metallic nickel. The proportion of the constituents are, in one hundred parts,

Metallic iron — — — —	96,50
Metallic nickel — — — —	3,50
	100.

4. *Analysis of the Meteorical Iron from Siberia.*

It is very probable that the mass of iron which was first discovered by the celebrated Pallas has the same origin with the former. It is said to weigh one thousand six hundred pounds. It is covered with a rough crust of iron, but internally consists of metallic iron, in whose cellular interstices a yellowish fossil, similar to olivin or crysolithes, is disseminated. In order to know whether this iron equally contained nickel, it was treated in the same manner as the former. After the precipitation of the oxyd of iron by caustic ammonia the remaining liquor appeared light-blue, and left, after evaporation, a greenish salt mass, from which, after the evaporation of the muriat of ammonia, the nickel was separated. The proportion of both metals, in one hundred parts, was

Metallic iron — —	98,50
Metallic nickel — —	1,50
	100.

Of the yellowish substance belonging to the Siberian iron, one hundred grains were infused with three hundred grains of concentrated sulphuric acid and the same quantity

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tity of water, and after sufficient digestion distilled, and the liquor was cohobated. The residuum was mixed with boiling water, to which some sulphuric acid had been added, and afterwards filtrated. Siliceous earth remained, which weighed after ignition forty-one grains. The sulphuric liquor was evaporated to dryness, and the residuum strongly ignited, by which it became pale red and dusty. Being infused with water, and filtrated, a red oxyd of iron remained, which after being edulcorated, dried, and mixed with oil, gave, after ignition, eighteen grains and a half of black oxyd of iron. The liquor, which was free from iron, deposited crystals of sulphat of magnesia, and the magnesia obtained from it weighed, after ignition, thirty-eight grains and a half; one hundred parts, therefore, contained,

Siliceous earth — —	41,
Magnesia — — —	38,50
Oxyd of iron in an attractable state	18,50
	98.

The author comparing in the second section of his Treatise his analysis with those made by other chemists on these meteorical substances, states, that except in the quantitative proportions, they perfectly agree with his examinations; a circumstance which seems to prove the common origin of all those substances. In the third section he relates several instances of the fall of meteorical substances, which he found recorded, as an addition to those mentioned by Mr. Chladni.

In the fourth section the author relates the opinions of several naturalists on the origin of meteorical substances, viz. La Place's, Chladni's, &c.

Mr. Klaproth concludes his paper with examining the native iron from Karnsdorf in Saxony, in order to find out the difference between this and the meteorical iron. According to the results of his analysis, the native iron of Karnsdorf contains, in one hundred parts,

Iron — — —	92,50
Lead — — —	6,
Copper — — —	1,50
	100.

From these experiments it results, that the presence or absence of nickel may serve as a criterion for discovering any native iron from such iron as is of a meteorical origin

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SUBSTANCE OF A MEMOIR *lately published by Cit.* CHAUSSIER, *Professor in the School of Medicine, at Paris, on the* MEANS *of preserving the* DEAD BODIES *of* ANIMALS *from* PUTREFACTION, *and preserving their essential* FORM, *and even by giving them* FRESHNESS *and the* APPEARANCE *of* LIFE.

THE bodies of animals, when they are deprived of life, exposed to the action of the atmosphere, plunged in water, or buried in the earth, speedily pass to a state of putrefaction, and become the food of worms and insects, and after a time, always very short, the mass of their flesh becomes reduced to some hectograms of a dust, which the winds disperse, which the waters carry away, and which vegetables absorb for their nourishment. This destruction, this alteration, so great, and so rapid, is a necessary consequence of the quality, of the very nature of their constituent parts, of their tendency to decomposition, and of the considerable quantity of fluids which they contain in comparison with the solids. In order, therefore, to preserve the carcases of animals, or any of their parts, we must necessarily change the natural order of their composition, and by the help of different agents, determine new combinations, which, by preserving the essential form and texture, may be, at the same time, imputrescible, unalterable by the vicissitudes of the atmosphere, and unattackable by insects.

After these primary considerations, which serve as a basis to his researches, Cit. Chaussier examines the different processes which have been successively employed, for the preservation of entire carcases, or of anatomical pieces; and after having remarked that some are illusory, and that the others do not protect animal substances from the voracity of insects; that all are attended with the inconvenience of altering the essential configuration, and of reducing the body to a shapeless mass, he announces the solution of sur-oxygenated muriat of mercury, in distilled water, as the most likely method to accomplish the desirable object. The use of this saline solution on animal substances, must vary according to the size and the condition of the object which it is intended to preserve. If it be only a separate piece, like the most of anatomical preparations, it is sufficient to plunge it in a solution of sur-oxygenated muriat of mercury, and to add in the vase one or more knotted parcels of fine linen, which contain some

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some grammes of this mercurial salt, a precaution essential to the ensuring its remaining always equally saturated. After ten, twenty, or thirty days of immersion, that is to say, when the part has been penetrated through its whole extent by the saline solution, when a new combination has been operated through all its points, we may draw it out of the liquor and place it in a narrow-necked jar or bottle, filled with distilled water, lightly charged with sur-oxygenated muriat of mercury, or else it may be exposed in a well-aired place, sheltered from the sun and from dust; it will then get dry, by little and little acquire a consistence and a hardness resembling wood; and in this state, says the Professor, it can no longer be either altered by the air, or attacked by insects. This, indeed, has been sufficiently proved by his experiments; Cit. Chaussier having for many years abandoned pieces thus prepared to insects and to the vicissitudes of the atmosphere.

The preservation of the entire body requires particular care and attention, all the details of which it would be impossible to comprise in a simple notice. It is in some measure a new art, the process of which can only be well executed by an experienced anatomist. It may be remarked, however, that to succeed compleatly in this preparation, there should be, by preliminary incisions, performed according to art, certain foramina or apertures made, by which the saline solution may penetrate easily and readily through the texture of all the parts; and when it is intended to give freshness and the appearance of life to the cadaver, it will be requisite, previously, to fill the vessels and cellular tissues with a solution of coloured gelatine or jelly. There should be, likewise, placed in the ocular orbits, eyes of enamel, proportioned to the age and habitual condition of the subject. After these preparatory processes, the cadaver should be plunged in the saline solution of sur-oxygenated muriat of mercury, and be kept there longer or shorter, according to its bulk or magnitude; after which it should be taken out to let it dry slowly, and thus form a sort of mummy as durable as those of Egypt, and which has, moreover, the advantage of preserving the characters and essential traits of physiognomy.

During the two years since which Cit. Chaussier compiled this Memoir, he has continued his experiments, and made an application of his method to different objects; he has, consequently, found that the solution of sur-oxygenated muriat of mercury, not only preserved animal substances from putrefaction, but likewise that it stopped the

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progress of it when commenced, and brought them back, in some degree, to their former state. He has made use of it, with the greatest success, to preserve wood, cartoons, peltry, &c. from the voracity of insects. It may be likewise employed in cabinets of natural history for the preservation of birds and small quadrupeds. For example, instead of following the usual method of impaling or stuffing birds of a moderate size, Cit. Chaussier contents himself with making an incision on the mediant line of the abdomen. He removes the viscera which are contained in it, as, likewise, those of the thorax, at the base of the cranium, through the duct or channel of the gullet, (an aperture very convenient to take away the encephalon) and after having made, under the skin in the thickest part of the thighs, different issues or apertures, he plunges the body in the saline solution, keeps it there for a longer or shorter time, and then takes it out; and when it has sufficiently drained, he fills the abdomen and the thorax with fine tow, sews up the incision that had been made, and gives to the body the attitude which it ought afterwards to preserve. Insects may be destroyed or driven away from animals that have been a long time prepared, by plunging them during a certain time in the saline solution.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

YOUR popular Journal of medical intelligence seems to be a fit medium for suggesting improvements in the Medical Art. A late unfortunate duel near the metropolis, has given rise to the following observations and proposals.—Without supposing any deficiency in skill and energy attaching to the professional gentlemen who attended the case alluded to, and without any documents of greater authenticity than the medical evidence given before the Coroner's Jury, and that of a gentleman not in the profession, I have ventured to submit these thoughts to the profession and to the public.

According to the evidence already mentioned, this nobleman received a wound from a pistol bullet, which penetrated the right side of the chest and lodged in or about the medulla spinalis. From the described course of the ball it must have penetrated the outer and posterior part of the

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the lungs only, where the pulmonary arteries and veins are of smaller diameter than in the thicker part or at the root of the lungs. Had the ball however passed through the larger blood-vessels of the lungs, such wound was not inevitably mortal, because numerous examples of recovery under such circumstances have occurred. The wound of the lungs was not therefore the fatal sign which produced the surgical despair on this occasion. But the ball penetrated through or between some of the vertebræ about the middle of the back, and the sure sign of injury done to the medulla spinalis, viz. loss of sensation and motion in the lower extremities, followed. Was this loss of sensation and motion immediate upon receiving the wound, or did it progressively increase? This was the critical symptom, for upon this and its attendant effects does it appear that life or death depended, as well as the possible chance of relief by a surgical operation. Now the osseus canal for containing the medulla spinalis in the dorsal vertebræ is about eight-tenths of an inch in its transverse diameter, and seven-tenths of an inch between the anterior and posterior sides of it, and the ball of a modern duelling pistol is not more than four-tenths of an inch in diameter; it is therefore evident that the ball could not of itself wholly divide the spinal medulla, even supposing it to pass directly through the centre of the vertebral cavity. Other chances would arise in the mind of a surgeon, such as those of protruded portions of bone; of the ball lying within the theca vertebralis, without having divided any part of the medulla, and all the degrees and combinations of these circumstances. Whether or not any external marks of sensations on the region of the spine indicated the place of the ball's lodgement, I am uninformed, but it is most probable there were; and if not, the course of the ball would have directed a reasonable guess at the precise part. To propose any surgical operation for the relief of such danger is not very consistent with professional prudence, but it may be a question with many persons, whether such prudence ought to decide the fate of a man, whose rank and talents promised (when duly regulated) the highest services to his country. It is said, upon good authority, that large doses of opium, with a view to smooth the way to death, was the only professional treatment adopted in this instance; and as these observations are not levelled at the respectable gentlemen employed, but are addressed to the profession for future occasions, and to the public, as an encourage-

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encouragement to support a desperate effort rather than abandon life without giving a chance, I feel warranted in the freedom of my argument. It has happened in my experience, that the exhibition of opium increases symptomatic fever, and promotes haemorrhages from wounds; which last I suppose to ensue principally from its diminishing the contractile powers of the blood vessels, and perhaps also the coagulating propensity of the blood.—Opium therefore, on these principles, would hasten death by loading the lungs and the cavity of the chest with blood, whilst the other wound in the spine continued its natural progress.

As a faint hope, and with a sincere wish to promote the utility and rank of the profession, I would propose to treat a future similar case in the following manner. To bleed freely from the arm as soon as the mind had recovered the shock, and to keep the pulse constantly low and feeble during the first six or seven days, by repeating the operation according to the pulse, and by a strict abstinence from nutritious and stimulating food. If the injured part of the spine can be discerned, or fairly indicated, then I see no objection to an operation similar to trepanning on the skull, by the help of small saws, such as described in Mr. Hey's Surgery. This operation could be put in practice without any immediate ill consequence, because after the integuments and muscles were removed, and the two rami of the spinous process sawed through, the canal of the spine would be exposed, so as to enable the surgeon to remove any extraneous or injurious body, and at least a chance be given to the patient not much worse than that afforded by trepanning the skull. Whether such an attempt was or was not warrantable in the case now spoken of, I cannot tell; but I trust the known rank of these professional gentlemen would induce them to exert every possible effort, and even to risk their own prudential feelings for such a grand object. I am, &c.

London, March 19, 1804. JULIUS ACER.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE great object of all our exertions is the attainment of happiness. The prodigal and the miser, the peasant and the philosopher, all keep in view this attractive prize, but

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but follow it through different paths; a discovery or invention excites our approbation, as it is likely to facilitate its attainment. It is this which constitutes its excellence, and to this we must ultimately refer in examining its claim to utility. The present age teems with innovations; but amidst the varied crowd, the Cow-pox excites the greatest attention, and the most sanguine expectations. By means of its introduction, the medical profession expect to destroy a disease, which has so long continued its extensive ravages, and thus to remove a portion of evil from the world; but its future advantages remain to be questioned by philosophers and to be determined by experience. Some doubts upon the subject have lately appeared in a paper, signed Scepticus, which drew forth two answers shortly after. If I may judge from his silence, the doubts of Scepticus are perfectly removed; but as the arguments of these writers have produced no conviction in my mind, I shall proceed to the statement of my sentiments.

What are the probable consequences of the extermination of the Small-pox?

1st. I shall state the principles which are the foundation of my opinion.

2d. I shall apply them to the solution of this question.

3dly. I shall consider the arguments contained in the answers.

The human species, if supplied with ample stores of subsistence, double their numbers every twenty-five years. The United States of America bear undeniable testimony to the truth of this position. Possessed of large tracts of rich land, which was easily procured at a trifling expence, most of the settlers became cultivators for themselves. Those who had purchased larger shares than they were able to cultivate alone, found a difficulty in procuring labourers, and the price of labour rose proportionably high. A large family, far from being a burthen, was a source of opulence to the parents, and marriages were consequently early and universal. The price of provisions was extremely low, for although the labour which was employed in producing them was much dearer than in old countries, yet the rent of land which here forms so considerable part of their price was more than proportionably less. In such a state, population advanced with rapid strides, and nearly the same rapidity continues. Twenty-five years is the time in which the whole population of the States is doubled; but in some of the back settlements, where the manners are more pure and the air more salubrious, its rapidity must be

greater;

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greater; for during a long time the number of deaths in the larger towns has exceeded the births, and a constant supply from the country was therefore necessary to support their population.

But although Nature has endued the human species with this astonishing fecundity, it is certain that their numbers must always be limitted by the means of subsistence. The food which is necessary for the maintainence of a million of inhabitants cannot afford the same subsistence to a million and half; and although the share of each individual may be somewhat lessened, there is a point at which this diminution must stop. In a country which has been inhabited for a considerable time, the only addition to the quantity of the means of subsistence must depend upon an increase of the cultivated land, or an improvement in the art of cultivation. Its increase will now be slow and gradual, and population, notwithstanding its natural rapidity, must accommodate itself to this motion. Its elastic spring will be constantly pressing against the barrier of subsistence, but the scarcity of food in a variety of forms will be as constantly acting in curtailing its exuberance. That the slow increase of the inhabitants of old countries arises from a scarcity of food is sufficiently proved by its instant rapidity on the removal of this cause. The various checks to population, which are constantly operating in this state of society, and equalizing the numbers with the means of subsistence, may be classed under two general heads.

1st. Those which diminish the number of births that would otherwise take place.

2d. Those which tend to shorten the natural term of human life.

Under the first is ranked that unwillingness to marriage, which in all modern countries has considerable influence, and which arises from the difficulty of maintaining a family. Indiscriminate intercourse of the sexes, which destroys the fruitfulness of conception. Under the second head come filth, deficiency of food, large towns, unhealthy occupations, and diseases of all kinds.

I have here endeavoured to state my principles with perspicuity and conciseness, and to be sufficiently ample for my present purpose; of their truth I have little doubt, but should any exist in the mind of the reader, I refer him to the Essay on the Principle of Population by Mr. Malthus, from which the preceding is an abstract, whose lucid reasoning will remove every obstacle to conviction, except insurmountable prejudice.

I now

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I now proceed to a view of the probable consequences of the extermination of the small-pox. England is highly and extensively cultivated, and an increase of the quantity of food must be necessarily slow; here therefore a variety of checks are necessary to restrain the number of the inhabitants within the means of subsistence; and among the diseases which form so large a part, the small-pox held an eminent station. It is stated by Dr. Heberden in his Observations on the Increase and Decrease of Diseases, that of every thousand deaths the average number to be attributed to the small-pox is 95. The population of England being 9,168,000, and the annual mortality of the kingdom 1 in 40* of the inhabitants, which is 229,200, the number which annually died of this disease alone is 21,774. If so considerable a check to population be removed, no one can doubt that another equally efficacious will arise, and the only question to be asked is, whether the exchange will ultimately be beneficial? In calculations of happiness, the philosopher turns his attention to the labouring poor as the great mass of every community, and the present object of my inquiry is, in what manner they will be influenced by the removal of this check. A plenty of the necessaries of life is an essential ingredient of happiness, and the quantity in the possession of the poor depends upon the liberality with which their labour is rewarded. The wages of labour depend upon the proportion which the demand for labour bears to the quantity of labour in the market. If the demand be greater than the supply, the wages of labour will be high; but if the supply be greater than the demand, they will be proportionably low. The demand for labour depends upon the funds destined for the payment of wages, which are of two kinds: 1st. the annual revenue which is more than necessary for the maintainence; and 2d. the stock which is more than necessary for the employment of masters. It is evident that the supply of labour depends upon the number of labourers.† Since the inoculation of the small-pox has been introduced into this country, its mortality has principally fallen upon the poor, who either from carelessness, the expence of inoculation, or some other cause, have neglected to make use of that preventive, while a constant source of infection was kept up by

* Malthus's Essay on Population.

† This subject is amply and clearly treated in Dr. A Smith's Wealth of Nations.

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by it; thus many who would otherwise have lived to maintain themselves by their labour, are cut off in infancy, the supply of labourers is diminished, the wages of labour are raised, and the happiness of the poor is consequently increased. Who then can doubt the consequences of destroying this disease? A large addition will be made to the present quantity of labour, the wages will be reduced to the most miserable subsistence of the labourer, and all the evils of squalid poverty will be diffused among the most considerable class of the society. The increased price of provisions, which will be the necessary effect of the increased number of inhabitants, will lessen the demand for labourers; for in such a time of scarcity, masters will diminish the number of their servants. But though population will thus for a time be raised above its proper level, this cannot continue long. Misery, arrayed in all her terrors, will extend her destructive arm, and mankind will shrink beneath her poisonous touch. Truth obliges me to sketch this melancholy picture, and I hasten from it to a task less disagreeable.

As the paper of Credulous contained nothing of argument which militated against my opinions, that signed J.J. is the only one I have to examine; and for the sake of perspicuity, I will take the arguments in the order he has placed them.

"1. As great a number of men exist at all times as the earth is able to support." In this statement it was evidently meant by Scepticus, as many as the *present* productions of the earth are able to support, for no one can doubt that if the means of subsistence be increased, population will rise to an equal height; the answer is therefore inapplicable.

"2. Vice and misery were introduced to prevent an increase of population." There are only two ways of explaining the observations made on this statement by J. J. either he was inclined to cavilling, or he was ignorant of the nature of the question concerning the origin of evil. Philosophers have endeavoured to make the existence of evil consistent with the infinite benevolence of the Deity. A great part of the vice and misery in the world proceeds from the constant tendency of mankind to increase beyond the supply of food; this tendency is therefore in one sense its cause: but the question still presses upon the mind, why this tendency? The enquiry might be carried through a long succession of causes, up to the very plan of the creation, and the question would still demand explanation,

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why this plan from an infinitely wise, powerful, and benevolent Being?

"3. Disease is a species of misery, and the small-pox is a species of disease." Against this my antagonist does not contend, but he immediately adds, "the conclusion (*i. e.* the impropriety of exterminating the small-pox) cannot be allowed, for it is deduced from premises which are *doubtful* or *false*." I flatter myself I have already proved it to be deduced from premises which are *certain* and *true*.

I now come to the last observation which I have to examine: "The conclusion, if it has any weight at all, has too much; it proves the impropriety of attempting to prevent any other disease as well as the small-pox." The unavoidable necessity of checks to population being proved, the only question which remains is, which are to be preferred, as to *these* we should endeavour to transfer the influence of the others. In relation to the comparative advantages they possess, I think they may be placed in the following order.

1st. Want of inclination to marriage.

2d. Those diseases, whose mortality falls principally upon infants. The death of an infant excites a temporary uneasiness in the minds of the parents, but time soon wears away the impression, and society receives no injury.

3d. Those diseases whose mortality falls principally upon adults. The cords of affection which bind us to our worldly attachments, become more strong and numerous as age advances, and the pain from their rupture more acute; a wife and family, who depended for subsistence upon the personal exertions of the deceased, may be left destitute of support, or the burthen must fall upon society; in either cases the evil is considerable.

4th. Vice, or that indiscriminate intercourse which takes place between the sexes, destroying the fruitfulness of connection. Reason and religion oblige me to place it at the bottom of the scale.

The small-pox must certainly be placed among the second in the scale, and yet so desirable and considerable a check is in danger of being removed by the impertinent and meddling hand of man. The preceding principles incontrovertibly prove, that it is impossible to remove one check without giving rise to another; and when it amounts to so great a certainty, that the succeeding check will be a greater evil than that which we remove, the impropriety of our conduct is evident.

March 9, 1804. PHILANTHROPUS.

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

AT a time when the study of Botany has become a source of fashionable and popular amusement, and when the science of medicine, diffusing itself more extensively than at any former period in the public notice, has more or less occupied the attention of the unlearned, it may perhaps be an acceptable and not altogether useless attempt to unite in a popular form, these two branches of science. They are by nature intimately connected; and the powerful and varied effects, which are produced on the human frame by the numerous members of the vegetable kingdom, mark the destined union of the two sciences, and declare, that without the assistance of Botany, the study of Medicine cannot be complete. Chemistry indeed is also an indispensable handmaid to medicine; and, as poetry, painting, and music have been termed the sister arts, so these three may be called the sister sciences. But as chemistry is neither reducible to so precise limits as her sister, nor capable of being brought so much within reach of universal observation, the compiler of the following sheets has confined himself to an enumeration of the benefits, which from botany alone may be derived to the practice of medicine. Where any plant has appeared to be otherwise useful, either in the cultivation of the arts or the improvement of manufactures, as increasing the catalogue of esculents, answering the purposes of domestic economy, or contributing to the advantage of the farmer; these various properties have been carefully collected. The compiler claims no other merit than that of accuracy. He has consulted some of the most approved medico-botanical authors, that have fallen in his way; as well those who professedly treat of the subject in hand, as those who have only glanced at it incidentally in the course of their writings.

While there shall continue to exist a numerous class of society, reduced to the necessity of labour for their daily sustenance, and as long as there shall be found large portions of the world remote from medical assistance, it is impossible that in all cases the care of a legitimate son of Esculapius can be obtained by the sick; and, notwithstanding

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standing the well intended and, in some degree, just caution given by the learned, zealous, and benevolent high priest of Hygeia, in the second number of his monthly sacrifice at the shrine of that goddess, recourse must often be had for medical advice by the indigent and the solitary, to persons not regularly initiated into the mysteries of the faculty, nor stamped with an M. D. In spite of doctors, diseases will intrude; and it would probably be a task of difficulty to persuade the charitable 'squire's lady, or the humane country clergyman, that true charity and humanity require them to remain strictly neutral during the struggles of a poor helpless neighbour against the assaults of sickness, because they are not licensed by a diploma from Edinburgh or Oxford.

The stores of Nature for the relief of her creatures are unbounded: the disorders of the poor, and those untainted with the corruptions of luxury, are, generally speaking, simple; and every field, every wood, every despised ditch, every barren waste almost that displays itself before the eye of ungrateful man, presents him with a variety of remedies for his sufferings, and of palliatives for the consequences of his own folly or wickedness. To offer these to view in the most popular and comprehensive form is the present design: The compiler has extracted from a considerable number of volumes, and endeavoured to reduce into the smallest compass possible, the various properties ascribed to the indigenous plants of the British Isles: And as far as the knowledge of them appeared to be generally conducive to the advantage of society, or negatively desirable by way of caution against the effects of deleterious vegetables, no pains have been spared to render the detail full and satisfactory.

The botanical department is built chiefly on Dr. Withering's *Bot. Arrangement*; and from thence the descriptions of the plants have been uniformly adopted, as given in his third edition, 1796.

Dr. Woodville's medico-botany is the ground work of that part which relates to medicine; and whatever facts are adduced or opinions recorded, they are each carefully ascribed to their respective authors. In some instances, where quotations have been copied from an intermediate writer, the name of the original author only, has, for the sake of brevity, been cited in this compilation.

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Catalogue of such British Plants as have been found in any Shape serviceable to Man, whether in a medicinal, œconomical, culinary, or agricultural Point of View, together with an Account of the Uses which they have been made to answer, and an accurate botanical Description of each Plant.

Class I. Monandria.

Monandria, Monogynia.

1. Salicornia, *S. herbacea, S. europæa herbacea, S. internodiis longioribus.*

Anglice. Jointed glass wort, salt wort, sea-grass, marsh samphire.

Generic description. Calyx, rather bellying. *Seed* 1.

Specific description. Herbaceous, wide spreading, joints flatted at top and notched, scarcely nine inches long. Flowers in a spike, near together, three on each side. *On the sea shore, common.* Bloss. Aug. Sept.

Use. It is from the ashes of this plant that is obtained a fossil alkali, in great request for making soap and glass, which is known by the name of *soda,* and is chiefly made on the coasts of the Mediterranean. On the coasts of England, the green plant steeped in salted vinegar, is sold as samphire, to which, made into a pickle, it is very little inferior. The whole plant has a saltish taste, and is greedily devoured by cattle. *Withering.*

2. Hippuris. *H. vulgaris.*

Ang. Mare's-tail, paddow pipe.

Gen. desc. Cal. none; *summit,* simple; seed 1.

Spec. Desc. Leaves awl-shaped, eight to twelve in a whirl round the joints, narrow; *stem* straight, jointed; *flowers* equal in number to the leaves, and at the base of each leaf. *Muddy ponds and ditches (not common) in Scotland, Gloucestershire, and N. W. of Lancashire.* Blos. May.

Use. A very weak astringent. Goats eat it, but cows, sheep, horses, and swine refuse it.

Class II. Diandria.

Diandria, Monogynia.

1. Ligustrum. *S. vulgare. S. germanicum.*

Ang. Privet. prim. print.

Gen. desc. Bloss. four-cleft; *berry,* with two cells, two seeds in each cell.

Sp. desc. Leaves egg-spear shaped, entire, in opposite pairs, sometimes

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sometimes by threes, sometimes alternate. *Blossoms* white; segments thick and fleshy; stamens sometimes three or four. *Berries* black, egg-shaped; continue through the winter. *In hedges on gravelly soils.* Bloss. June, July.

Use. The leaves are bitter and slightly astringent. The berries are filled with a dry, spongy, violet pulp, from which a rose-coloured pigment may be prepared. With the addition of alum, the berries dye wool and silk of a good and durable *green*: for this purpose they must be gathered as soon as they are ripe. Oxen, goats, and sheep eat it: horses refuse it.

2. Veronica. *V. officinalis. V. mas supina. V. vera et major.*

Ang. Speedwell, male speedwell, fluellin.

Gen. Desc. Bloss. border four-cleft; lower segment narrowest; *caps.* two celled.

Spec. Desc. Leaves egg-shaped, serrated, hairy underneath and at the edges, opposite. *Stem* trailing. *Floral leaves,* strap shaped. *Blossom,* purplish blue; tube about half as long as the cup, white fruit stalks very near the end of the stem, but not terminating. *On barren ground and heaths.* Bloss. May, Aug.

Use. The leaves are slightly astringent and bitter: It is called by the French *thè d'Europe,* and Hoffman has, with many others about a century ago, recommended an infusion of them as a substitute for tea, but it is more astringent and less grateful. *With.* It is a good *antiscorbutic,* and has been used in the *gout* and *rheumatism—Hill.* As a medicine also numerous virtues have been ascribed to it, especially in disorders of the lungs, as *coughs, asthmas, consumptions,* &c. in which it is said not only to prove *expectorant,* by also by its extraordinary vulnerary power to heal internal ulcers. But to be judged of, by its sensible qualities, it is only to be recognized as an *astringent,* and not being sufficiently powerful to produce any considerable effect, is now disregarded by medical practitioners. *Woodville.* It is eaten by cows, sheep, goats, and horses, but swine refuse it.

3. Veronica. *V. Beccabunga. Anagallis aquatica vulg.*

Ang. Brooklime.

Gen. Desc. As above.

Spec. Desc. Leaves egg-shaped, flat, serrated with glands. *Stem* creeping. *Blossom* blue; bunches lateral; germen sitting on a thick yellowish-green glandular substance *In slow shallow streams,* and near springs that seldom

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freeze. The whole plant smooth and succulent. Bloss. June.

Use. This plant was formerly esteemed as an external application to *wounds and ulcers*, and was used in many diseases: it is now valued only for its antiscorbutic virtues; as a mild refrigerant juice, it is preferred in that disease which has been called the hot scurvy. To derive much advantage from it, the juice ought to be used in large quantities, or the fresh plant eaten as food—*Woodville.* The leaves are mild and succulent, and are eaten in sallads early in the spring. Cows, goats, and horses eat it; it is refused by swine.

4. Veronica. *V. chamædrys. Chamædrys spuria. C. sylvestris.*

Ang. Wild germander, germander speedwell.

Gen. Desc. As above.

Spec. Desc. Leaves egg-shaped, sitting, wrinkled, toothed. *Stem* with two opposite rows of hairs. *Bunches* lateral, frequently opposite. *Blossom* fine blue. In pastures, sides of hedges. Blos. May.

Use. The leaves are a better substitute for tea than those of the V. officinalis, being more grateful and less astringent. Cows and goats eat it; sheep, horses, and swine refuse it.

[To be continued.]

CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

The Anatomy and Surgical Treatment of Congenital and Inguinal Hernia; by Astley Cooper, F.R.S. &c. &c.

(Continued from pp. 279—282.)

In the ninth chapter the author treats of the circumstances to be considered previous to the operation. Every practitioner has had reason to lament that so much precious time is often wasted in fruitless attempts at reduction by the taxis long after every reasonable

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able prospect of success has vanished; and a few instances to the contrary do not invalidate the general rule of operating as soon as possible after this period, when it may still be done with probable safety and success. The death of a late highly esteemed nobleman is understood to be one of the many melancholy instances in proof of this rule of practice, which the author enforces with due attention.

Mr. C. observes that there is no very obvious criterion to determine the latest time to which the operation may be safely delayed. Hiccough, though a common symptom of mortification, is not always present in this state, and often occurs before it is established, as has been proved by many successful operations at the Hospitals in the Borough after hiccough has appeared. Soreness of the belly on pressure, succeeding great tension of the abdomen, Mr. C. thinks the least fallible sign of inflammation having proceeded to a fatal extent.

The operation itself is the subject of the next and very important chapter, part of which we shall give to our readers on account of the valuable, and in some degree original, observations which it contains. After describing the method of making the incisions through the integuments, and of opening the sac so as to expose its contents, the main object of the operation, namely, to relieve the stricture, is the next care of the surgeon. By carrying his finger up the hernial sac, he will find the stricture in one or other of the three following situations.

" First, at the abdominal ring.

" Secondly, above the ring, from one inch and a half to two inches, and inclining outwards toward the spinous process of the ilium.

" Thirdly, in the mouth of the hernial sac.

" If the stricture is owing to the pressure of the columns of the tendon which form the abdominal ring, it is then to be divided in the following manner. The surgeon passes his finger into the sac, as far as the stricture, and then conveys a probe-pointed bistory on the fore part of the sac, and, insinuating it within the ring, cuts through it in a direction upwards opposite to the middle of the sac, and to an extent proportioned to the size of the tumour. . . .

" It is best to divide the stricture by passing the knife between the ring and the sac, as a larger portion of peritoneum is thus left uncut, and the cavity of the abdomen is afterwards more easily closed.

" The direction given to the knife in dilating the stricture has been usually upwards and outwards towards the spine of the ilium, but I prefer doing it directly upwards for the two following reasons:

First, as the higher aperture must only be dilated directly upwards, it is better that the surgeon should have one general rule for the use of the bistory, applicable to every case of inguinal hernia, than to be perplexed in the operation by a variety of directions; and, secondly, the division of the tendon in this direction weakens

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the abdomen less than upwards and outwards, because, as the cord passes towards the abdomen in that direction, and the hernial sac is parallel to the cord, a dilatation in that course takes off the resistance which the tendon would otherwise make to any future descent. When the ring is divided directly upwards, the upper column of tendon which forms it, is cut; when it is dilated upwards and outwards, the transverse fibres uniting the columns are divided."

The second situation of stricture is above the ring, towards the spinous process of the ilium, at the orifice whence the hernia first quits the abdomen; and the constriction is occasioned by the tendon of the transversalis passing over the hernia, and the resistance of the edge of fascia under it. Here the Author lays down the following direction.

"The surgeon passes his finger up the sac and through the abdominal ring, till he meets with the stricture; he then introduces the probe-pointed bistory with its flat side towards the finger, but anterior to the sac, and between it and the abdominal ring, his finger being still a director to the knife. Thus he carries the knife along the fore part of the sac until he insinuates it under the stricture formed by the lower edge of the transversalis and internal oblique muscles, and then turning the edge of the knife forwards, by a gentle motion of its handle he divides the stricture sufficiently to allow the finger to slip into the abdomen; the knife is then withdrawn, with its flat side towards the finger, as it was introduced, to prevent any unnecessary injury to the parts."

The direction of this dilation being straight upwards, scarcely any risk is incurred of cutting the epigastric artery.

The third seat of the strangulating stricture is a thickening of the mouth of the sac itself, but which the author considers as a rare occurrence.

The chapter concludes with remarks on the treatment of the omentum, in which the Author condemns the custom of applying a ligature round it, to make it slough away, as has sometimes been practised.

The succeeding chapter, on mortification of the intestine, contains some discriminating practical remarks and original experiments, in confirmation of them, which deserve notice. The treatment is the following. "As the intestine, when mortified, cannot be returned into the cavity of the abdomen, the surgeon is to consider in what manner he is to proceed, to save his patient from that most miserable state of existence which is produced by an artificial anus. In forming his judgment upon this subject, he will be directed by the state in which the part is found.

"If a small hole only has been produced, the intestine should be returned into the abdomen, excepting that portion of cylinder in which the hole exists. A needle and ligature should be passed through the mesentery at right angles with the intestine, to prevent it including the branches of the mesenteric artery which supply that part of the intestine, and then through the mouth of the her-

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nial sac; and tying the thread, the intestine becomes confined to the mouth of the hernial sac, and the fæces pass readily from the opening by the wound, but will in part take their course by the rectum. As granulations arise and the wound becomes closed, the opening in the intestine is gradually shut, and an artificial anus is effectually prevented."

This first variety is illustrated by a successful case.

But when the whole cylinder of intestine is mortified, Mr. C. advises that "the mortified part of the intestine should be cut away, and the ends brought in contact, and confined by means of four ligatures."

Some experiments follow. The author divided entirely the intestine of a dog, introduced within it a cylinder of isinglass, and made three sutures upon it, so as to unite the divided bowel. In three days the animal had stools; and on the sixteenth day, when he was killed, the union was found complete. The same was repeated without the isinglass, and with equal success. In both these experiments, when the intestine was returned, the ends of the ligatures were left hanging out of the wound.

Other experiments are introduced, which were made by Mr. Thompson, Lecturer in Surgery in Edinburgh. In the first of these the intestine of a dog was divided, then sewn up as before, but the ligatures returned entirely into the abdomen, and the external wound closed. On the tenth day the animal was killed in health; the intestine was perfectly united, the traces of the ligatures partly obliterated on the outside, and some of the threads had disappeared; and as they had passed through into the intestine, they had doubtless been discharged by stool. A second experiment, in which more time was taken, gave a similar result.

These experiments are valuable, as they shew the comparative safety of returning a ligature of the intestine into the cavity of the belly, though the author prefers retaining the ends of the threads at the external wound. The subjects of the experiments, however, were animals in previous health; and the author himself admits, that a suture of the intestine in hernial cases sometimes brings on such dangerous symptoms, that an immediate removal of the threads is requisite This interesting chapter concludes with further experiments and remarks on the union of wounds in the intestine.

The treatment after operation is that usually adopted. It has been proposed by some to effect a radical cure during the operation, by removing the sac either with the knife or by ligature. Mr. C. shews the danger and usual impracticability of this proceeding; the danger chiefly attends the ligature from the well known tendency of inflammation to extend through membranes in all their extent from a single morbid point.

A separate chapter is made on the treatment of *very large Hernix*, chiefly as leading to an improvement in the mode of operation. This is before mentioned in describing the common operation,

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tion, and is repeated here as particularly applicable. It is to return the herniæ merely by dilating the stricture, *without* opening the sac; a practice which the author appears first to derive from the eminent Professor at Anatomy at Edinburgh. "Dr. Monro, of Edinburgh, to whom it would be ingratitude not to acknowledge the obligation I feel for the instructions conveyed in his Lectures, has strongly urged the propriety of dilating the abdominal ring, without opening the sac, in hernia in general; and I feel convinced that this operation will be gradually introduced into general practice, when it has been fairly tried, and found, if performed early, to be free from danger, and attended with no unusual difficulty."

The propriety of this practice the author states to be peculiarly applicable to very large herniæ, on account of the accumulated difficulty of returning the hernial contents, from their frequent adhesion, and from the habitually diminished size of the abdomen, which expose the intestine, if the sac is opened, to a degree of unavoidable injury from the operator that often proves fatal. Two useful cases are given in illustration of each method; the one successful, the other fatal.

Very small hernia are next considered. These are in fact *incipient* hernia, or protrusion of the intestine through the upper abdominal opening, extending only to the ring, and not descending into the scrotum.

The tumour produced by this variety is very small, not more than by an enlarged gland, and hence they are sometimes overlooked, and the patient dies as is supposed from some bowel complaint unconnected with surgery. The operation for this hernia only requires the incision to be made above the ring, towards the spinous process of the ilium.

Sometimes the sac itself has been returned, when being recent, it has contracted no considerable adhesion to the adjacent tendons.

An important variety of hernia is next described. It is a descent of the intestine *directly opposite the abdominal ring*, and not obliquely from the upper abdominal opening in the course of the spermatic cord. This variety is really what common inguinal hernia was formerly supposed to be. It is thus described "The abdominal ring is closed towards the abdomen by the tendons of the internal oblique and transversalis muscles. The lower parts of these tendons are inserted into the pubis, and connected with the fascia which passes upwards from the external oblique muscle at Poupart's ligament. If this tendon is unnaturally weak, or if from malformation it does not exist at all, or from violence has been broken, a protrusion of the viscera may then take place immediately behind the ring. . . . . Below the abdominal ring the appearance of this tumour differs from that of common bubonocele in being situated nearer the penis, and the spermatic cord passes on its outer side, instead of its posterior part, particularly at and above the abdominal ring. Above the abdominal ring the sac passes directly upwards, so that no part of it takes the usual oblique direction

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direction towards the anterior superior process of the ilium, but rather the contrary direction towards the navel. Examined by accurate dissection its course is as follows: The sac first protrudes between the fibres of the tendons of the transversalis, nearly an inch directly above the ring. It then passes under the lower edge of the tendon of the internal oblique muscle. The epigastric artery runs upon the outer side of the hernial sac. The spermatic cord has no connection with it above the ring. The hernia then emerges from the abdominal ring, the spermatic cord being on its outer side, and it is covered with the facia given off by the tendon of the external oblique but not by the cremaster muscle."

The most important circumstance in this variety of inguinal hernia is the situation of the epigastric artery, which is precisely the reverse of that in ordinary bubonocele; in the common disease the epigastric artery runs on the inner side of the tumour, or nearer to the linea alba; in this variety it is situated on the outer side: Consequently, the dilatation of the stricture upwards and *outwards* will in this instance divide the artery, an accident generally fatal from the hæmorrhage into the cavity of the abdomen. To avoid it, Mr. C. observes that it would be the best in these cases to dilate *inwards*, if the nature of the variety is fully ascertained; but as the diagnosis is sometimes difficult, and as too much must not be left to the discrimination of every surgeon who may be called to operate on hernia, and because cutting inwards would incur the same risk of dividing the artery if the bubonocele were of the more common species, he advises to dilate here, as in every other instance, *directly upwards*, which will avoid this danger in either case.

Very frequent dissection has convinced Mr. C. that the above-mentioned variety of hernia, emerging from the abdomen opposite the ring, is by no means uncommon.

Nothing particular occurs in the Chapter on Hernia in the Female.

The volume concludes with a very instructive chapter on Congenital Hernia, in which a curious variety is given by Mr. Forster, surgeon to Guy's Hospital, of a hernial sac existing within the tunica vaginalis.

The plates contained in this volume form so large and important a part of its contents, that they require to be individually noticed. This we shall do in a few words, premising, that to the elegance of beautiful execution on the part of Mr. Heath, the engraver, they unite the advantage (in a scientific work infinitely more important) of being drawn apparently with perfect fidelity by Mr. Kirtland, of the natural size, from preparations, as we are informed in the Preface, actually in the author's possession, or in the Museum at St. Thomas's Hospital.

The first plate is purely anatomical, shewing the healthy structure of the parts immediately connected with hernia, particularly the insertions of the oblique muscles, Poupart's ligament, the valvular structure of the upper abdominal opening, and the passage of the spermatic cord through it down to the ring. The

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The second plate is an internal view of the same opening, and the relative situations of the spermatic, epigastric and iliac arteries.

The representation of hernia succeeds in the next; on one side large and old, filling the scrotum; on the other incipient, or of the kind described in the chapter on small hernia, appearing like an enlarged gland.

The next, an internal view of the same, shewing the effect of gradual enlargement in old bulky herniæ, to bring the upper abdominal opening nearly opposite to the ring.

In the next, several smaller figures are given, shewing the relative situation of the epigastric and spermatic vessels, the gradual progress of hernia, septa dividing the hernial sac, the effect of the improper use of trusses in only partially obliterating the disease, and some singular varieties.

In the following plate are described the form and application of trusses, an incipient hernia just quitting the abdomen, and a coloured figure (the only one of this kind in the volume) representing the peculiar livid hue of mortified intestine.

The next plate, which is admirably instructive, exhibits in the same subject, a hernia on each side; on the left, situated at the outer side of the epigastric artery, and on the right, at the inner side. The danger of wounding this artery and the caution requisite to avoid this accident are clearly seen.

An internal view of the same preparation follows.

A still more complicated case of hernia in the same subject is represented in the following plate.

The next is remarkable for the number of herniæ in the same subject, with a complication which could not have been discovered but by dissection.

The eleventh and last plate, containing several figures, exhibits in one that singular variety of inguinal hernia found by Mr. Forster; in the others, illustrates different points in the operation, particularly that of returning the hernia without opening the sac, so strongly recommended in the foregoing part of the work.

The style is a simple enunciation of facts, clear and unaffected. Almost every thing relating to the history of opinions and discoveries in this disease is omitted; the author has appeared desirous to incur a personal responsibility for the accuracy of every fact and assertion, and to confine himself to the results of a multitude of dissections, of which actual demonstration exists in one or two cabinets of anatomy, or to the records of numerous operations of which living witnesses remain. Under a plan thus circumscribed, to have made so valuable an accession to the kindred arts of anatomy and surgery, will be a lasting testimony to the knowledge, professional skill, and unsparing industry of the Author, worthy of the noble field of observation in which they are habitually employed.

This volume is dedicated with peculiar propriety to the eminent Teacher whose lectures on anatomy and surgical skill have for so many years enriched the School of St. Thomas's Hospital.

A Synoptical

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A Synoptical Table of Diseases, exhibiting their Arrangement in Classes, Orders, Genera and Species, designed for the Use of Students; By A. CRICHTON, M. D. F. R. S. &c. (This is published in one very large sheet.)

THE Author has prefixed a short Introduction, in which he assigns the reasons which led him to this publication. Many of them have doubtless struck other Teachers, who have felt the impossibility of adhering strictly to any system of Nosology before published.

" The great object to be obtained by an artificial arrangement of the matter of any science, Dr. C. observes, is practical utility. In regard to Medicine, this utility is of two distinct kinds; *first*, the facilitating the business of instruction, and *secondly*, the assisting the practitioner with such hints and views, as well regulated analogy always yields.

" In all sciences, analogy or similitude is the great principle on which arrangement takes place. This analogy or similitude may have reference to different things, not only in different sciences, but even in the same science. In regard to diseases, it may refer either to the phenomena, or to the nature or cause of diseases, or to their seat, or cure; or it may have a mixed reference to all of these. It may easily be proved, however, that if an arrangement of diseases is attempted to be exclusively founded on any one of these grounds, it must be defective. Similarity of symptoms, it is well known, often occurs in diseases of an opposite nature, and an arrangement exclusively founded on such a principle, would connect diseases which had no other natural analogy than external character, and would rather tend to injure than promote the views of practice.

" The seat of diseases has been made the basis of nosological arrangement in a few instances, but it is evident that such a method can only be useful as an assistant to memory, otherwise diseases will frequently be brought together which have no real analogy with each other, either with respect to their causes or cure. No system of arrangement has hitherto been founded on the method of treatment alone, and indeed, considering the state of Medicine, it is evident that it must not only be an imperfect, but in many instances, an hypothetical method; for although we can put a complete stop to many diseases, and medicine and diet are of great advantage in others, over which we have not so complete a dominion, no one can be blind to their inefficiency in many cases, and to the want of agreement among practitioners in physic, both in regard to the indications of cure and choice of means for fulfilling such indications.

" The system of arrangement which is here offered to the student, is founded on every circumstance attending diseases, which furnishes any hint as to their similitudes or dissimilitudes, and is therefore not merely historical, nor ætiological, nor anatomical, but is of a mixed nature, borrowing assistance from all these methods. It follows, at a humble distance, the celebrated works of Sauvages, and Dr. Cullen; for although Sauvages calls his nosological

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gical arrangement, an historical one, that is, one which is founded on the history and symptoms of disease alone, yet it is evident to any one who studies it, that he has taken into account, many other circumstances of analogy, and it would therefore appear vain and self-sufficient to pretend that the method here followed is new in its kind.

"But although I have adopted the principles which seem to have regulated both Sauvages and Cullen, it will be found that I have not strictly followed them in the execution of the subject; for it has appeared to me, as well as to many others, that Sauvages has not only subdivided too much, but has admitted many diseases as genera, and still more as species, some of which have no pretension to be considered as distinct diseases, and others of which are admitted in more places than one under different names.

"From the arrangement of Dr. Cullen, this table differs on another principle. His fondness for simplifying appears to have led him to generalise more than the nature of the subject justifies, and accordingly he has made too few general divisions or classes; for it will be found that some of his classes comprehend orders, and many orders comprehend genera, which have scarcely the most distant analogy. The just reputation and great learning however both of Sauvages and Dr. Cullen, and above all, the difficulty of the subject, ought to make every one extremely cautious of criticising, far more of censuring their works.

"In a mere table such as the present one, it will not be expected that I should enter into a detail of those principles which regulate the division of diseases into classes, orders, genera, and species, and explain by what rules genera, species, and varieties are to be distinguished from each other. But when I reflect on the high degree of estimation in which the nosological arrangement of the celebrated Dr. Cullen is so justly held, and how much I have presumed to differ from so great and respectable an authority, I ought to feel it a duty incumbent on me to assign the reasons of my dissenting from him. In a few remarkable instances I have done so in notes, but the size and form of the table has prevented me from accomplishing this in every instance. Should the table fall into the hands of any medical men who are not students, the author intreats them to consider it as a mere guide in his lectures."

Our readers will be able to form an idea of this table from the following abstract of the Classes and Orders, viz.

CLASS I. PYREXIÆ, or Febrile diseases.
- *Ord.* I. PHLEGMASIÆ, Inflammations.
  - *Gen.* 1. PHLEG. sthenicæ.
    - Spec. 1. Cephalitis, &c. &c. 23 species.
  - *Gen.* 2. PHLEG. asthenicæ.
    - Spec. 1. Erysipelas, &c. 4 species.
- *Ord.* II. FEBRES, Fevers.
  - Contains 11 genera and 38 species.

CLASS

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CLASS II. HÆMORRHAGIÆ.
Ord. I. HÆM. ARTERIOSÆ, contains 6 genera and 12 species.
Ord. II. HÆM. VENOSÆ, same genera and species.

CLASS III. FLUXUS, Morbid Evacuations.
Ord. I. FL. cum febre, 4 genera and 8 species.
Ord. II. FL. sine febre, 3 genera and 6 species.

CLASS IV. NEUROSES, Nervous Diseases.
Ord. I. MORB. CONVULSIVI, 7 genera and 13 species.
Ord. II. SPASMI, 5 genera and 10 species.
Ord. III. COMATA, 5 genera and 10 species.
Ord. IV. ADYNAMIÆ, 7 genera and 15 species.
Ord. V. DOLORES, 11 genera and 21 species.
Ord. VI. VESANIÆ, 3 genera and 8 species.
Ord. VII. ERETHISMUS or morbid sensibility, 2 genera and 7 species.

CLASS V. INTUMESCENTIÆ, Swellings.
Ord. I. HYDROPES, dropsies, 6 genera and 13 species.
Ord. II. INTUM. ADIPOSÆ, 1 genus and 2 species.
Ord. III. INTUM. FLATUOSÆ, 2 genera and 4 species.

CLASS VI. CACHEXIÆ, Morbid Habit of Body.
Ord. I. CACH. ANTONICÆ; this order includes scrophula and morbid enlargements of the viscera.
Ord. II. CACH. CONTAGIOSÆ, lues, yaws, &c.
Ord. III. VITIA CACHECTICA, cutaneous diseases and mortifications.

CLASS VII. EPISCHESES, Retention of natural discharges, 9 genera and 21 species.

CLASS VIII. LOCALES.
Ord. I. DYSCINESIÆ INFLAMMATORIÆ.
Ord. II. DYSC. ATONICÆ.
Ord. III. HERNIÆ.
Ord. IV. PROLAPSUS.
Ord. V. LUXATIO.
Ord. VI. TUMORES.
Ord. VII. VULNUS.
Ord. VIII. ULCUS.
Ord. IX. FRACTURA.

The modesty of the author's preface disarms criticism, otherwise we would ask, why an order of *painful diseases* should have been admitted at all; and if admitted, why gout, stone, colic, cramp, &c. should have been excluded from it? These, and several other questions which may be asked, are, doubtless, answered in the lectures; and on the whole, we consider this arrangement as very well adapted to the purposes of teaching, and the practice of medicine.

MEDICAL

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MEDICAL AND PHYSICAL INTELLIGENCE.

[FOREIGN AND DOMESTIC.]

Mr. BUCHHOLZ, of Erfurt, recommends the following improved method of preparing arsenic acid: Having mixed together two parts of muriatic acid, of 1,200 specific weight, eight parts of finely pulverised oxyd of arsenic, and twenty-four parts of nitric acid, of 1,250 specific weight; pour the liquor into a glass retort, and let it boil till all the oxyd is dissolved, and no red fumes of the nitrous acid be disengaged. If the nitrous acid should be more concentrated, sixteen parts of it will be sufficient to be gradually added to the above mixture, but then it is necessary to pour this acid to it, during the act of boiling, till the nitrous fumes cease to be disengaged. The liquor is now evaporated to dryness, but care must be taken that no arsenical fumes be evolved. The white dry mass, which is thus obtained, must be preserved in close vessels, either by itself or dissolved in water. The properties of this acid are the following:—It acts as a powerful poison on the animal body. In the dry state it is white and quite tasteless. It is slowly dissolved in from four to six parts of water, of a middle temperature. In boiling water it is soluble in almost all proportions; and even with a quarter part of water, it forms a solution of the consistency of a syrup, which being suffered to stand and cool, deposits crystalline grains. It attracts the moisture of the atmosphere and grows liquid. Its solutions have a sourish taste. In a moderate fire it remains fixed, and becomes a clear and limpid fluid; but by degrees it is changed into oxyd of arsenic, and is volatilised in form of fumes. In the state of being melted, it corrodes the earthen and glass vessels in which it is melting, forming vitreous masses, partly soluble, partly insoluble in water, which depends on the duration of the melting, and the quantity of siliceous earth that is dissolved; these masses being dissolved in water, depose the siliceous earth. It contains in 100 parts 14½ ct. more oxygen than the oxyd of arsenic; or, 100 parts of oxyd of arsenic absorb almost 17 per ct. more oxygen, when changed into arsenic acid.

Professor TROMMSDORF, of Erfurt, has adopted a new method of preparing muriated barytes, founded on the mutual decomposition of the sulphat of barytes or heavy spar, and of the muriat of lime, which takes place when both are heated and melted together. The experiments made by that gentleman yielded the following results;

1. The heavy spar is decomposed by the muriat of lime in the dry way, but not all at once. 2. The muriat of lime, melted in every

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every proportion with the sulphated barytes, gives muriat of barytes and some muriat of lime; and if a less proportion of the latter be taken, only a small quantity of sulphated barytes is obtained. 3. The best proportion seems to be, to take equal parts of muriat of lime and of sulphated barytes. 4. The sulphated barytes is entirely decomposed by melting it repeatedly with muriat of lime; and the muriat of barytes, which is thus procured, has a great degree of purity, and may be freed from the adhering muriat of lime by alcohol, or again dissolving and crystallising the mass. 5. The preparation of the muriated barytes, made in this manner, is the most profitable, particularly if the muriat of lime is obtained during other pharmaceutical processes, as the preparation of the spir. sal. ammon. caustic.

The process for obtaining muriated barytes is as follows: Take white sulphated barytes that has been properly glowed, and muriated lime, four pounds of each; pulverise and mix them well, and put them into a large crucible, which is afterwards covered. Keep the vessel over a good fire till it becomes red hot; the mass being melted, pour it into an iron vessel, and let it cool. Reduce the mass into small pieces in an iron mortar, and having poured it into an earthen vessel, infuse it with ten pounds of boiling water, stirring it frequently, and afterwards filtrate it through a strainer of linen. All the liquor having run through, put it aside; then pour the residuum into a clear iron vessel, and dry it over a gentle fire. Mix it again with four pounds of muriat of lime, and put it into the red hot crucible, treating it in the same manner as before. The residuum is dried and treated again with three pounds of muriated lime. All the liquors which are thus obtained, are evaporated in an evaporating dish till a cuticula forms itself on the surface; and in the temperature of 5 to 8° above the freezing point, all the muriated barytes contained in the liquor, will shoot into fine crystals; otherwise the liquor must be farther evaporated till the whole be crystallised. Put the thus obtained crystals on clean blossom paper in a sieve, and place them during several days in an airy warm place. Dissolve them again in water, and let them crystallise; in which manner, crystals of a very white colour will be obtained, if the heavy spar and the muriated lime have been quite free of iron particles, and if the iron vessels that are used in this process be clean and well polished. In this manner from four pounds of heavy spar, three pounds of muriated barytes may be obtained.

M. Jean Baptiste-Louis Routier, Physician and Member of the Society of Emulation at Amiens, has lately published at Paris, a pamphlet entitled, Considerations on the Malady peculiar to Women in Labour, called the puerperal fever. This interesting dissertation, particularly so to young students, was the object of a public act in the School of Medicine at Paris; it is divided into three articles: In the first, the author endeavours to prove that the fever

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fever termed puerperal has no actual existence; that what authors have admitted under this denomination, is a phlegmasia of the order of phlegmasiæ, of the diaphanous or serous membranes, almost always complicated with a fever, which may, says the author, be referred to the orders of known fevers. In the second article, he describes and classes these different complications with which the phlegmasia appears, and by which it is almost always governed; which requires that the physician should turn his whole attention to this part in the malady here referred to. In the third article, M. Routier endeavours to establish, conformably to these views, the treatment proper to the puerperal fever, and the different modes of its termination, &c. &c.

A new Work, entitled, An Examination of the Mineralized Remains of Vegetables and Animals of the Antediluvian World, generally termed Extraneous Fossils, illustrated by coloured Plates, by JAMES PARKINSON, Part the First, containing the Vegetable Kingdom, will be published on the 1st of June next.

TO CORRESPONDENTS.

Dr. LAMBE's Researches into the Properties of Spring Water, with Medical Cautions against the Use of Lead in the Construction of Pumps, Water Pipes, Cisterns, &c. will be noticed in our next Number.

Communications are received from Mr. Bartlett, &c.

Many of our Readers having requested a General Index of Diseases, Remedies, and Persons, for every *ten* or *twelve* volumes, we desire to acquaint them that such an Index is now preparing.

A CORRESPONDENT, to whom we acknowledge ourselves indebted for several valuable papers, complains of our having omitted and altered some expressions in his last communication; but we assure him that without such omissions and similar alterations, the Reply could not have appeared. It is the indispensable duty of the Editors to consider not merely what a wounded Author may feel, but the language in which his feelings ought to be expressed when transmitted for insertion in the Medical and Physical Journal, as the Nature of the Work cannot admit of its being made the Vehicle of Invective.

ERRATA.

Page 230,	line 26,	*for* designing,	*read* designating.
	last line,	after atrophulus,	dele comma.
232,	line 24,	*for* papulæ,	*read* papula.
	36,	imitates,	irritates.
233,	1,	fonthi,	ionthi,
234,	2, 3,	papilla,	papillæ.
235,	28,	metastical,	metastatical.
240,	35,	antimony,	antimonii.

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THE
Medical and Physical Journal.

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A Case of inoculated Cow-Pock succeeded by a confluent Eruption of genuine Vaccine Vesicles on the LABIA PUDENDI; *occasioned by an Act of the Patient herself. Communicated by* Mr. COLEY, *Surgeon in Bridgnorth.*

ON Feb. 29, 1804, I vaccinated three children of one family by inoculation. The vaccine virus was inserted into the skin of both the arms of each of them; for as they lived at a distance of nearly eight miles from my residence, I was desirous to effectually give them the disease with as little trouble to myself as possible. It so happened, that I had the virus (taken only a few days before) in a dried state, upon the points of two or three lancets, upon thread, and upon the convex side of a piece of quill. The six arms were vaccinated indiscriminately with the virus thus prepared; and each of the inoculations proved successful

On the 8th of March I called upon these children, and observed the true vaccine vesicles formed, with a small surrounding inflammation or areola on each of the infected parts. The youngest child, a female, aged two years, which is the subject of this communication, had *scratched* the vesicles much; and I found, had been in the habit of so doing every night, and often in the day, except prevented by the woman who had the care of it. I directed measures to allay the increasing inflammation, and to prevent a repetition of this practice.

On the 12th I visited these patients, intentionally for the last time, when I found every thing had gone on well, except what I before noted respecting the habit the youngest child had acquired of scratching the inoculated parts, and which, though a good deal prevented, the nurse had not been able to interrupt; a slight fever had very perceptibly taken place in each of them; the vesicles had proceeded in the usual way, and a very extensive ery-

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thematous inflammation had occurred and was still present, but evidently declining. Conceiving they had perfectly undergone the vaccine disease, I now left them; previously however giving directions as to the surgical treatment of the inoculated parts.

On the 18th of March, being six days after the last time of my seeing these children, and eighteen days from the period of their being inoculated, I was desired, somewhat hastily, to go to examine the youngest of these subjects, who was represented to be very ill with a fever, retention of urine, a swelling of the labia pudendi, and a breaking out over all these parts. Surprised at such a representation of symptoms, I went immediately to see this child; and indeed, was not a little astonished at the appearances I had to observe, which were as follow: The labia pudendi were each of them swollen to a very great size, and exquisitely tender and inflamed; on the inside of each was a very considerably diffused pustular eruption of the *confluent* kind, many of the vesicles, as they doubtless were originally, having spread and run into each other, so as to form one continuous eruption, which was observable on separating the labia to go as far as the eye could perceive; on the fore parts of each labium were three or four very distinct and well formed *circular* pustules, evidently of the genuine vacciolous kind—so well marked, that no person who had ever been in the habit of seeing vaccine vesicles could possibly have mistaken them for any other; though this was not observed by the nurse, or the parents, or many others who had occasionally seen the child. The dysury, or pain of urining, was so distressing, that for many days they had not been able to prevail upon the child to pass its urine oftener than once a day. It had been costive, and there was a smart fever then present, and had been, as the attendants informed me, for some days.

Having thus sufficiently ascertained the state of the case, and being convinced in my own mind that the eruption was truly vacciolous, however it might have been occasioned; I thought it right to inquire with as much minuteness as possible into all the circumstances that were likely to throw any light on so important an anomaly of the disease: for if the system were occasionally, or under circumstances not previously discernible, liable to a secondary fever as the small-pox is, and moreover with that a confluent vacciolous eruption, such occasional occurrences, it is evident, would operate much against the new

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practice, or tend ultimately to bring it into discredit. On inquiry how and when this disease of the pudenda was first discerned? the nurse very readily answered, that it had been discovered so long back as the time of my last visit, which was on the 12th (six days since); but as there was then only a little pustule or two, she did not think it worth mentioning; that what led to the discovery was her observing the child often rubbing and putting its fingers to those parts. When she first examined the pudenda, the child had then scratched so much as to make the part bleed. From the 12th to this period many fresh vesicles had formed; and lately she observed that they had run into one another, so as to make one continuous irregularly shaped eruption, occupying the whole of the inside of the labia, and proceeding inwards as far as she could see. The nurse and the parents expecting this eruption would have gone off, made no application for earlier assistance, nor did it appear that any thing had been locally used.

I at this time disguised my opinion of what the disease was; and prescribed such applications and medicine as the state of the case seemed to require.

Now, as to the cause or occasion of this secondary eruption and fever, I think it cannot fail being evident to any discerning practitioner, that the whole of these symptoms were brought on by a second, or perhaps many repeated inoculations of the parts mentioned, by the fingers of the child itself, who, it has been observed, through the whole progress of the disease, was constantly in the habit of scratching the inoculated parts of the arms; and with the nails thus infected with fresh vaccine fluid, and applied, as it evidently was, by scratching to such an extent as to produce an abrasion of the cuticle, and on parts too that are most numerously supplied with lymphatics, it cannot be wondered at that the consequence should be such as the symptoms described. I shall not determine so positively, whether the fever were strictly vacciolous, as I have not before seen any case of confluent vacciola; but as the fever, or febricula, that accompanies the inoculated cow-pock is uniformly of a very transitory duration, hardly indeed the fever of a day, it very probably was not truly a vacciolous fever, but a symptomatic fever arising from local irritation, inflammation, and pain of those parts.

On the 22d, the fever was entirely removed. The confluent pustules, from the applications of poultices and a saturnine lotion, were wholly separated, leaving the parts nearly healed and quite clean. The parts that had been

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occupied by the distinct pustules were entirely healed; very superficial cicatrices remaining. In a few days after this I had the pleasure to leave the child in perfect health.

To this case, which in the present state of our knowledge of the Cow-pock I have thought right to lay before the public, I shall not subjoin any remarks; the facts stated are sufficiently clear, and the practical inference to be drawn from them is such as a medical practitioner cannot avoid noticing.

Query. Is it probable that some of the anomalous cases of the cow-pock, those accompanied with eruptions on parts not by the vaccinator inoculated, may have been occasioned by a similar cause?

April, 1804.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE treatment of gun-shot wounds is a subject of great importance, and well merits the serious attention of the Faculty; and in a peculiar manner that of the younger branches of the profession, who intend dedicating their early years to the service of their country, which during war never fails to present a wide field for improvement, whether their views are directed to the navy or army. The deprivation and sacrifices of numberless comforts will be fully compensated by the opportunities they will have, of giving the finishing stroke to their education, if extensive experience can add any thing to therapeutic and prophylactic skill. It is greatly to be lamented that most of the authors who have written on this subject, never saw a shot fired in anger; and from their want of personal experience, are very inadequate to the task they have assumed, of giving lessons of instruction on topics the most serious and important, for such they must ever be considered, where the lives of British heroes are in the hands of men whose ideas of treatment have been borrowed from those productions. Would not the tear of sorrow, and the heart rending sigh, burst forth, if we were told that a Wolfe or an Abercrombie was lost to his country from maltreatment? Then, how careful the student ought to be in his choice

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choice of authors. I am of opinion that Mr. John Bell's discourses on the treatment and nature of wounds should form a part of every Surgeon's library; he writes like a man who has been engaged in scenes of war, or one whose hospital practice has enabled him to treat the subject in a masterly manner. I have been informed that he derived a considerable part of his knowledge from visiting the ships under the command of Lord Duncan, subsequent to the victory he obtained over the Dutch fleet; but on examining the title page of his book, I find it was published before that action took place: however, his visiting the wounded is a proof that he has been assiduous in obtaining information on the subject.

A few cursory remarks are all I shall presume to offer, in my endeavours to point out to the young surgeon, that plan of treatment which experience teaches is most likely to crown his endeavours with success. To think of laying down rules which are never to be deviated from, would be the most consummate folly and presumption; for much must ever be left to the ingenuity and prompt decision of the surgeon. If not, from whence would our most noble improvements proceed?

The wounds in a naval engagement are generally from cannon shot, and consequently much more dreadful than those of the musket; and often in proportion to the extent of the wound may the danger be estimated. The men who nearly compose the aggregate of a ship's company, are from their peculiar modes and habits of life, such as cannot boast of the best of constitutions; and many of them are tainted with the scurvy, a disease which formerly made great havock in the service; but the liberality of government has for years provided a remedy (lemon juice) which has nearly eradicated this scourge of sailors.

Then the treatment of a wounded seaman is briefly this, which may in almost every case be equally applicable to a soldier. In flesh wounds, or where there is only a loss of muscular substance, the wound must be well cleaned with a sponge moistened with water; the hæmorrhage stopped, if issuing from the mouth of a large vessel; and the tourniquet must be applied and properly managed, until the vessel is taken up, which is to be done by means of the tenaculum or forceps, taking care not to include any of the cellular membrane with which it is surrounded. If it cannot be secured in this manner, a needle must be passed round it, including as little of the surrounding parts as possible. Your success in saving the life of your

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patient, and performing a speedy cure, will greatly depend upon your dexterity in securing the vessels, which I shall elucidate by relating to you the case of a man, wounded at the battle of Copenhagen, who was placed under my care at Yarmouth hospital, together with nearly the whole of those who had lost their limbs. This person had his arm amputated at the insertion of the deltoid muscle; the operation appeared to have been performed in a very proper manner, so much so, that the face of the stump was perfectly covered with the integuments, and at the time he was received it was nearly cicatrized. That part where the brachial artery hung from being still open, proved a source of great distress to the patient, for every time it was touched, with a view of disengaging it, the sensation arising from a slight pull, somewhat resembled an electrical shock; which clearly evinced that a nerve had been included in the ligature: and it nearly cost the patient his life, for violent inflammation took place, pervading the whole of the stump, extending itself to the axilla, breast, and back. The parts were wrapped up with emollient poultices; and by the aid of fomentations, it terminated in suppuration, so extensive, that had he not been well supported with beef tea, wine, porter, decoct. cinchonæ, &c. he must have sunk under it.

It is surprising how this man escaped that fatal complaint, locked jaw; but so various and inexplicable are the springs which actuate Nature, that the prognosis of the most skilful is often erroneous.

Should the bleeding flow from every point of the wound, you may suspect that your patient is of a scorbutic diathesis; that the crassamentum of the blood is broke down by this or some other disease. In this case you are to cover the wound with lint, and by graduated tow compresses and rollers secure it; taking care not to remove the dressings until it begins to suppurate. In such a case, the inflammation will be purely local, and a generous regimen may be resorted to immediately; for in these cases, where there is a great loss of substance, the discharge is always profuse; and if your patient's strength is not kept up by strong soups, jellies, and such things as will restore lost stamina, he will sink into a low nervous fever, and die.

Here I must caution you against giving the bark in substance, for those who have been so profuse in their encomiums on this *drug*, in this state, have much to answer for. If the surgeon is not blinded by prejudice, he will discover his patient losing his appetite, and becoming more and

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and more debilitated every hour, whilst he is pouring in large libations of this *ne plus ultra* medicine. Believe me, more is to be done by diet. In these cases, make up your mind never to give it except in decoction; a little of the tincture may be added, and the mixture acidulated with acid. vitriol. Such medicine, given in moderation, will assist the digestive powers, but the bark in substance clogs up the stomach, checks the secretion of the gastric juice, and totally unhinges it, rendering all its efforts to convert the food into chyme useless and abortive. The stomach is an organ endued with such sensibility, that it always sympathizes with the injuries which the body sustains; and to give bark in substance, under such circumstances, is productive of a train of symptoms the most distressing, viz. pyrexia, vomiting, &c. Such symptoms may occasionally arise from the injury itself; but I am fully convinced they are most frequently the effects of this highly irritating and nauseous drug.

In flesh wounds bleeding is seldom necessary, and is generally productive of the worst of evils, for it often happens that men in action are quite exhausted, from loss of blood, before the surgeon can attend to them; a well directed broadside makes so much havock, that a third of the wounded die from want of medical assistance. Allowing that a man should lose very little blood before his wounds were secured, if they were extensive the discharge from them during the cure would reduce him too much, even admitting that every thing comfortable and nourishing was at his command, which is not always the case; so you perceive, how absolutely requisite it will be for you to guard against bleeding, or any other evacuation that may tend to debilitate your patient, for local inflammation will generally yield to local applications, such as emollient poultices and fomentations; and in these applications great judgment is requisite to know the precise point where to discontinue them. It frequently happens that the skin takes on a diseased action, assuming an erysipelatous appearance, at the time the wound is discharging very profusely; in such a case, cold applications to the surrounding inflammation will be proper, namely, a weak solution of cerussa acetata, renewing rags dipped in it as often as they grow warm. By this means the temperature of the part will be reduced, and the patient relieved from considerable pain, the natural concomitant of inflammation.

The best diet, when the strength is sinking under profuse gleetings, is animal food, in the shape of jellies. As

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the stomach should be distressed as little as possible by the process of digestion, if sufficient nutriment cannot be conveyed into the system in this manner, it may be thrown into the intestines per anum, with a few drops of laudanum. Many a valuable life has been saved in this manner. When the granulations have arrived at the point when bleeding and fungous flesh make their appearance, the pressure of the roller and compresses should be increased, which will greatly facilitate the healing process, and enable you to cicatrize the wound, without having recourse to escharotics, so frequently used by the surgeons of the old school.

With respect to wounds of the hands, feet, and limbs, accompanied with fracture and splintered bones, it is highly requisite for you to be possessed of intrepidity, tempered with coolness; for what you decide upon, must be exerted without delay, and you will be careful never to amputate without circumstances render it absolutely necessary; every surgeon possessed of anatomical knowledge, can quickly determine. If you find the nerves and tendons injured, the muscles much lacerated, and spicula drove into the very heart of a limb, with or without much hæmorrhage, in such a case amputate immediately; and here permit me to remark, your fore finger will make the best probe, for you must use it to ascertain with precision the extent of the injury.

In wounds of less magnitude, when there is a probability of saving the limb, by using your fore finger and thumb, you will be enabled to pick away every particle of bone, for the smallest atom, if felt, must not be left behind, and you must recollect that this is your only time for cleansing the wound from every foreign body; to leave any thing unfinished now, and attempt it when inflammation and tension had taken place, would be extremely cruel, and subject your patient to inexpressible torture. It will be frequently necessary for you to use a knife in detaching splinters, and if you cannot disengage them without enlarging the wound, do it boldly; it is better that you should risk dividing an artery, than to lose your patient by trismus, which is often occasioned through the irritation of splinters

Wounds of this description often mortify; you may say, if there is any likelihood of such an occurrence, it will be most prudent always to amputate. Such reasoning is erroneous; it is a common thing for stumps to become sphacelous, an evil originating sometimes from crowding the

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the wounded together, and frequently from a cachectic state of the body, independent of external causes; therefore, when this occurs, little judgment will determine, whether a small or large surface is most likely to terminate favorably; and in this dilemma, it affords me infinite pleasure to be enabled to direct you to the choice of a medicine which merits the highest encomiums, namely, nitre, finely pulverized, sprinkled all over the part, completely covering it at every dressing, which will as surely stop its progress as mercury will that of the lues venerea; and if the fœtor is ever so disagreeable, it will, in the space of twelve hours, entirely subdue it. You must not neglect to wash the part with vinegar and decoct. cinchonæ, administering the latter internally with port wine, supporting the strength with strong jellies, as directed above.

When a limb is carried away with a shot, or splinter, you must go through the regular plan of amputation, performing your operation at a distance from the wound, to leave integuments for covering the face of the stump. If the limb is too much shortened to admit of amputation, the flap operation of the hip or shoulder must be performed. A marine, who had his arm blown off with a shot at the battle of Copenhagen, near the shoulder, was placed under my care at the naval hospital in Yarmouth. The surgeon of the ship he belonged to, having many men wounded, and being in want of assistants, (which I am sorry to say is too often the case in the Navy) was constrained to content himself by securing the vessels, and dressing it up in the state he received him in the cockpit. It soon became, from the retraction of the muscles and integuments, a complete sugar loaf stump, and his cure bore some resemblance to a resurrection, for he had to contend with every dangerous and unpleasant symptom; he was reduced to a mere skeleton by the discharge.—During the cure he was seized with tetanus and trismus, and laboured under these complaints longer than ever I knew any man in such a state. The wound was dresed with lint dipped in laudanum; opium and æther were prescribed liberally, and the cure perfected by decoct. cinchonæ, wine, nourishing jellies, &c. but not until an exfoliation of nearly the whole of the remaining bone came away. It is worthy of remark that, generally speaking, all the operations of the surgeons in that action were well performed, though in a cockpit with candle-light, and would have done honour to any one on shore, with the advantage of plenty of assistants and day-light, unannoyed

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ed with the cries of the wounded, din of battle, and roaring of cannon.

But there was one exception; and this old surgeon, being probably nervous, forgetting to keep an eye on the edge of his knife, and not saving a sufficiency of integuments, some of his patients were detained in the hospital, three, four, or five months, on account of exfoliations. When there is not a sufficient covering left for the bone, the cure will be greatly expedited by using tight rollers, which prevent retraction.

The appearance of the countenance will greatly assist you in forming your prognosis; if the patient is of a florid, clear, and healthy appearance, you may augur favorably; but if he is of a swarthy, sallow, cadaverous aspect, your hopes will not be animating; such patients will bear a greater proportion of wine than the former, for whose recovery ale or porter will be most conducive. When circumstances will admit of it, take care to keep the wounded at a considerable distance from each other, and if any of the stumps or wounds look flabby or ill conditioned, do your utmost to obtain their removal, and total separation from the rest; the poisonous effluvia emanating from a single patient may infect the whole, therefore the good of the poor sufferers, as well as a regard for your own reputation, will stimulate you to exert every nerve in their behalf.

Fumigating the apartments of the wounded, wherever there are a number collected together, with nitrous vapours, according to Dr. Carmichael Smyth's plan, is of infinite service in correcting fœtor, and subduing contagion.

Wounds of the thorax and abdomen require a very different treatment, the antiphlogistic regimen must be strictly observed; you are to use the lancet freely, according to the urgency of the symptoms. Though these wounds often prove fatal, you are never to despair of success; many instances of recovery from balls perforating the lungs can be adduced, some of which I have witnessed myself. I have often thought that the tinct. digitalis, a medicine which stands high in my estimation, might in some measure supersede the necessity of bleeding so profusely; if given in sufficient quantities, it will check the impetus of the blood, by lessening arterial action, and thereby give the ruptured vessels and lungs an opportunity of healing, without impoverishing the body so much as is generally done. I have experienced its good effects in pulmonary inflammations, arising from other causes, and doubt

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doubt not of its efficacy in cases where similar symptoms originate from wounds.

Wounds of the joints are always dangerous, and when the capsular ligament is perforated, and the heads of the bones fractured ~~or otherwise~~ injured, the safest plan will be to amputate. The loss of a limb must ever be considered a great deprivation, and when the injury received does not appear very extensive, the entreaties of the patient prevail on the surgeon to attempt the cure; the latter sympathizes with him, and from a supposition that there is a chance of a favorable issue, he remains passive, but seldom has the happiness of bringing him off, even with an anchylosed joint. Bleeding has been carried to great lengths in such cases, and I believe great mischief has been done by erring on what may be considered the safe side, for local inflammation will be more readily subdued by means of leeches, and the cold saturnine lotion. How often do we perceive marks of inflammation, when the pulse is weak and feeble, when the flesh is wasted, and strength exhausted? Much more might be said, but I am afraid I have encroached too much on the limits of your publication. I shall conclude by craving your indulgence for the insertion of the following remarks.

No class of men whatever have rendered their country more essential benefit than naval surgeons; yet strange to tell, they are not remunerated for their services, as well as their brethren in the army. This is a circumstance not known to the bulk of the nation, but it is too true; and it is to be hoped that a noble Lord will exert himself as much in their behalf, as a noble Duke has done for those in the army; very little addition has been made to their emoluments since the days of Queen Anne! This is a subject of more national import than may be imagined at first sight. The reason why the army is better supplied with surgeons than the navy, is very obvious; their pay and treatment is better, and when the nature of their respective services is duly estimated, taking into consideration the deprivations and sufferings of both parties, there can be no difficulty in deciding which of them ought to receive the most ample and handsome compensation. Every admiral and captain in the service last war, had to lament the want of medical men; and it is well known that many a brave fellow (whose useful life might have been saved to his country) bled to death from the same cause. The modesty and forbearance of the medical department in the navy, have operated to their disadvantage, otherwise their complaints

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plaints would have become the subject of parliamentary discussion; and as there are naval characters in both houses, who know how to appreciate the merits of naval surgeons, it is to be hoped they will soon receive merces laborum. I am, &c.

Romsey, April 21, 1804. RALPH CUMING.

Case of Aneurism; *by* Dr. Joshua E. White, *of Waynesborough, in America.*

On Thursday, May 23, 1799, I was requested to visit Mrs. P. aged fifty-five years, living a few miles from this place, who, since Christmas last, had been troubled with a tumour under the upper part of the sternum, which her friends supposed to be what is commonly called a wen, and for the extirpation of which I was called. During the last three weeks the swelling had increased rapidly in size. The integuments were much distended; the cutis had changed colour, and become of a very deep red. Upon examination I found it to be immoveable, of a firm consistence, and the surface smooth and equal. Throughout the whole of it a strong and violent pulsation was to be felt, which was evident to the sight at the distance of several feet. Its nature, unfortunately for the patient, was too evident, and I did not hesitate to pronounce it to be an aneurism. The patient suffered much pain, not only from the tension of the skin, but from its weight. She could not lie down with any tolerable ease, and she had shooting pains in different parts of her breast. The tumour was about ten inches in circumference round the base, and the contents could not be made to recede the least upon pressure. A few days previous to my seeing her, two small punctures had been made in the anterior part of the swelling, at her request, upon the supposition of its being an abscess, and with a view of discharging its contents. Neither of them penetrated the aneurismal sac, though one of them divided the external coat of the artery; for at every diastole of the heart, the thin internal coat (which might here be emphatically called the "thread of life,") was evidently pushed forward, and seemed every moment ready to yield to the *vis á tergo*. The discharge of blood from the vessels of the skin afforded her considerable relief from pain and tension.

The

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The patient could not trace the origin of the tumour to any certain cause: hence it most probably arose from a partial weakness of the aorta. She had been for many years affected with the chronic rheumatism. About twelve months before the present tumour made its appearance, a smaller one had discovered itself in the same place; but which, in a short time disappeared, without any application. With the complicated distress of pain, restless nights, and unpleasant forebodings, the patient was anxious for relief, and entreated me to do something towards it. For the removal of the tumour, no remedies, I told her, could be applied; and her friends were made acquainted with its nature, and the inevitably result. To support it against the violent impulse of the blood, I advised a covering of thin sheet lead; rest was strongly enjoined, and anodynes were occasionally directed. Expecting the tumour would soon burst, and prove instantly fatal, I left her. This event took place in a week. The discharge of blood was so enormous and sudden, that the by-standers compared it to its being "poured from a pail suddenly turned upside down." The orifice was about the size of a dollar. She expired without a groan, and in an instant. Permission could not be gained to open the body. Thus we are left in ignorance as to the effects produced upon the lungs, &c. There was an evident separation of the clavicles from the sternum (most probably from an absorption of their substance), and this last was considerably elevated. The hardness which I have noticed most, probably arose from a deposition of matter which sometimes takes place round an aneurismal sac, and which, in some instances, has been known to approximate to a cartilaginous or osseous nature. The person who made the punctures said, "it cut like gristle."

That the action of an artery should be able to produce such a derangement or loss of substance as appeared to be evident in this case, not only in the clavicles, but also in the sternum and ends of the ribs, may, at first view, appear surprising; but our wonder will cease when we know that the most violent effects are sometimes produced upon bones, as well as the softer parts, by the pulsation of a large artery in an aneurism; that the former may be, and often are, separated from their joints, elevated or displaced from their natural situation, and sometimes entirely dissolved.

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On the PLANTS *from which the* ELASTIC RESIN *is obtained.*

By Prof. WILLDENOW.

(With Two coloured Engravings.)

THE remarkable substance known by the name of elastic resin or caoutchouc is imported to us in great quantities from South America in various forms, generally in the shape of bottles, and it is employed in Europe for several medical and chirurgical purposes, for making catheters, trusses, syringes, &c. and also for rubbing out black pencil marks. It was long known to be a vegetable production, and the inspissated juice of a tree, but it was a long time before this was botanically examined. Linnæus thought the elastic gum to be prepared from a tree to which he gave the name of cecropia peltata, and he firmly believed that this was the only tree from which that substance was obtained. It has however since been ascertained by modern botanists, that there are several trees which yield elastic resin, but especially, that the caoutchouc which is imported into Europe, is never taken from cecropia peltata, but from a far different plant. It appears moreover from the researches of modern chemists, that this substance is likewise contained in several European plants, namely, in the berries of viscum album, though it is never to be met with in any European plant in so pure a state as it is observed in several trees of hot climates. The younger Linnæus takes the Jatropha elastica to be the true elastic resin tree, which he learned from Aublet's work (Histoire des Plantes de la Gujane Française, tom. 335, p. 871) who found this tree only with fruit; and Linnæus concluded from the form of the latter, that the elastic gum tree which Aublet calls hevea gujanensis, belonged to the genus Jatropha. Prof. Richard however discovered the same tree during his travels in Gujana, in flower, and at the same time with fruit, and from his accurate examination of both, it appeared to make a new genus which is now called Siphonia. Mr. Richard found but one species which bears the systematic name of Siphonia cahuchu, of which a branch is represented in Fig. 1, on a smaller scale, from a specimen in my collection. Siphonia cahuchu, (Siphonia Elastica, Woodville, Medical Botany, tom. 4) belongs to the Linnæan class of Monœnia, Monadelphia. It is a large tree, growing to the height of sixty feet and more; the bark of the branches is smooth and grey-brown. Leaves on

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on long foot-stalks, and very close together. Leaflets half a foot long, elliptical, pointed, entire, coriaceous, on the upper side smooth and on the under side whitish, with very short, fine, and close hairs. From the axilla of the leaves arises a panicula of small white flowers, longer than the leaves. Male flowers have a monopetalous, campanulate calyx, which is five-cleft. Corolla none. Filaments in a column with five ovate antheræ. Female flowers cleft in teeth which are recurved and deciduous; germen roundish and a little conoid, style none, stigmata three, emarginated, depressed, capsule woody, three-parted, three-celled, in each cell one seed of the size of a sweet almond, elliptical, spotted, and covered with a thin and brittle epidermis. The seeds are said to be eagerly sought for by the Americans and to be a very palatable food. The manner of obtaining elastic resin from this tree is by making incisions in the trunk of the tree, from which a milky juice issues which is received into earthen vessels. On exposure to the air this juice gradually inspissates into the known elastic resin. In America it is employed for different purposes, and they make of it bottles, boots, flambeaux, &c.

Besides this tree, which is now pretty well ascertained, another has been discovered in the Isle of Madagascar, yielding a substance which perfectly resembles that of the Siphona, and said to be obtained by similar proceedings; and it is to be expected, that several other lactescent trees of warm climates may produce such a substance. This tree is called by Mr. Jacquin, Commiphora Madagascarensis. On tab. 2, *(a)* a branch with flowers is represented in natural magnitude; and in *(b)* a branch with leaves lessened by half. It belongs to the class of Dicœcia, and the male flowers are only as yet known. Mr. Jacquin gives of it the following description.—The branches are round, covered with a yellowish bark which adheres loosely, leaves oblong, blunt, finely serrated, having at their base two small foliaceous appendices. Flowers yellowish, small, appearing before the eruption of the leaves; they are deciduous. Calyx bell shaped, cleft into four short teeth. Corolla, consisting of four lanceolate petals which surround eight subuliform filaments, four of which are shorter than the rest. Antheræ erect and oblong. Pistillum and fruit unknown.

To

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

HAVING received from several medical gentlemen, (particularly in London) specimens of barks enclosed in franks, of what was sold to them as the real *cortex salicis latifoliæ*,* and finding these to be no other than the common species used by basket-makers; I have deemed it highly necessary, to prevent imposition in future, to send to the different professors, lecturers, and teachers in London and Edinburgh,† specimens of the real bark, and the leaves of the tree, accompanied by the following circular letter.

"Sir,

"IF you are disposed to notice to your pupils, the *cortex salicis latifolia*, I have sent you a specimen of the bark and leaves of the tree for that purpose. This is the more necessary, as the want of this information renders those who wish to try its effects liable to be imposed on by the vendors; who either may not know it, or, what is worse, sell other sorts in its stead; thereby bringing into disrepute a valuable indigenous substitute for the *cinchona*.

I am, &c.

G. WILKINSON."

Sunderland, February 18, 1804.

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* The only genuine bark I can find in London, where I was in the month of June last, was at Gordon's herb shop, Newgate Market.

† Specimens have been sent to the Medical Schools of St. Bartholomew, St. Thomas, and the London Hospitals; to Drs. Pearson, Batty, Clark, Dennison, and Squires; Messrs. Brookes, Wilson, Thomas, Carlisle, &c. in London. To Drs. Monro, Gregory, Duncan, Hope, Home, Hamilton, Rutherford, and Mr. James Russel, Edinburgh.

A CASE

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A Case of Hydrocephalus Internus; *communicated by* Michael Bartlett, *Member of the Royal College of Surgeons, London, and Apothecary to the Finsbury Dispensary.*

James Wilson, a boy about eight years of age, became a patient of mine the 19th of June last, for hydrocephalus internus, not with any view towards a cure, but merely to palliate present symptoms; at this time the head was so considerably enlarged, that he could not raise it from the pillow without the assistance of his friends; he had lost the power of speech, and the pain in the head was so excruciating that he would scream for hours at a time, until quite exhausted, when he would sink into a kind of lethargic state, scarcely appearing to breathe.

The account his father gave me of the progress of his complaint previously to my seeing him is as follows. His mother had a very difficult labour with him, (which Mr. Farley, the gentleman who attended her, accounted for by observing that the head was unusually large.) The child grew and was healthy until about sixteen months old, when he was seized with the hooping cough, and that in so violent a degree, that he lost his sight and strength, and became entirely helpless. Mr. F. was requested to see the child, who, after examining the head with some attention, declared it to be hydrocephalus internus. From this time the head continued gradually to enlarge, but the child regained his sight and strength, so as to be enabled to walk with the assistance of his father's hand, or in a go-cart, and that for two hours at the time. His appetite and evacuations were regular; he was lively, and what is very remarkable, notwithstanding the great injury that was done to so delicate an organ as the brain, he retained the sentient faculty, in a manner truly astonishing; for he would reason with his parents (who were of a religious turn of mind) upon the immortality of the soul, and put such questions to them as, to use his father's expression, both astonished and alarmed them. His memory was so retentive, that he would quote passages from scripture which he had heard a year before, and repeat a whole page verbatim, that had been read to him. The remedies made use of (for he had been under a variety of practitioners) were those usually employed upon these occasions, such as blisters, drastic purges, ung. hydr. fort. &c. without

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any material alteration or benefit to his complaint. A short time previous to my seeing him, the gentleman who attended had ordered his head to be shaved, and some warm stimulating oils to be rubbed on, such as ol. origani, &c. with a view to ease the pain; and what is worthy observation, immediately after one of these rubbings, he lost his speech entirely (which he had not done before) and never regained it after. From the time I first saw him until his death, which happened the 15th of October following, he remained much in the same state, sensible but speechless, vision imperfect but not obliterated, as he could distinguish objects of moderate magnitude.

Phenomena that appeared on Dissection.

The skull very thin and transparent, not being thicker than a shilling in some parts. Sutures closely united. The vessels upon the dura mater rather turgid, but that membrane did not adhere to the cranium so firm as is usual at that age. Longitudinal sinus natural. Upon raising the dura mater, the convoluted appearance of the brain was lost for a smoother surface, and the vessels of the pia mater lying upon that surface. The cerebrum had a very flaccid feel, and the undulating motion of the water was evident through it; it was necessary before cutting through the falciform process of the dura mater to support the depending part of the brain, upon attempting to remove the upper part of the right hemisphere. Although the incision was made two inches above the corpus callosum obliquely upwards and outwards, it opened the right lateral ventricle, and part of the water escaped. From the under side of the corpus callosum, about two inches above the upper side of the fornix, the two lamina of the septum lucidum were distinctly seen, and the handle of the knife could with ease be passed between them. The membrane was quite transparent; the communication of the two lateral ventricals was at the posterior part. The water of a light straw colour, and about *thirty-two ounces* in quantity. No appearance of inflammation upon the membrane lining the ventricles; the communication to the third ventricle considerably enlarged, as was that cavity. The internal surface of the cerebellum natural, but at the posterior part a pellucid membrane appeared, under which was contained about eight ounces of water of a much darker colour than that in the lateral ventricles; this was contained in a cyst immediately under the tentorium, and had no outlet or

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communication with the fourth ventricle whatever.* The optic nerves were smaller, softer, and of a browner colour than natural. The other nerves were natural.

On the Nature and Cure of the Complaint.

From the history of this case it does appear, that the disease existed at birth, a circumstance which I conceive generally, if not *always*, to take place, as hydrocephalus is decidedly, in my opinion, a modification of scrophula, proceeding from stamina originally debilitated and relaxed. Admitting this to be the case, ought we not to pay a more strict regard to the original state of the constitution, and by prescribing such remedies (in addition to topical ones) as are most likely to restore the vigour and tone of the constitution, strike at the root of the disease: such as country air, sea bathing, nourishing diet, &c.? Ferrum præp. is a most excellent medicine for children of weak and relaxed habits, given in doses of from three to six grains two or three times a day. Superficial symptoms are too much attended to in practice, while the more important, the actual and existing state of the constitution, is too often neglected; the strength or the weakness of the patient is a grand point to be attended to in the treatment of every disorder, however different in their symptoms and appearances. To quote the words of a monthly medical reporter: "Notwithstanding a considerable diversity in their shapes and complexion, there exist in strictness of fact, only *two families* of disease. The one, the offspring of debility; the other owing its immediate origin to a state of undue mental or physical excitement. This simple doctrine, first started and promulgated by the celebrated Brown, throws upon the obscure region of medical science a beam of light, which upon almost every possible occurrence or supposable emergency may securely guide the judgment and conduct of an experienced, careful, and discriminating practitioner."†

St. John's Square, March 23, 1804.

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* This cyst is in the possession of my friend, Mr. Taunton, of Paternoster Row, a gentleman to whom I have been on various occasions obliged for important information, and who by his persevering zeal in anatomical research, promises to be no small contributor to the promotion of professional science.

† See Dr. Reid's Account of Diseases, Monthly Magazine for July, 1803.

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Frederick Hoffman's Essay *on the Dissimilarity of* Fixed Vegetable Alkaline Salts, *with Observations and Remarks on the Changes which the Septic Acid undergoes by Combination with those Alkalies, by Dr.* Mitchill.

It has been repeatedly objected to me, that the *nitrous* acid of the shops does not correspond with the character which I find to be possessed by the *septic* acid. It is true that, in some of my early essays, published during the years 1795 and onward to 1798, I did employ the term "nitrous" as a sort of synonime to the word "septic:" but then I always enclosed it within a parenthesis, and my object was to lead the mind towards that acid as having a radical similitude with the one I was describing, though without any intention of affirming their identity. I now find that this has been misconstrued, and that some persons understand me as having affirmed that the nitrous and septic acids were so exactly alike, that what was true of one was in all respects true of the other.

Now, this is a serious mistake in me, if ever I said so, or in others, if they have ascribed to me what I did not say. In 1796 (see Med. Rep. vol. ii. p. 235—240) I stated this difference, as I thought, very plainly, and at considerable length. I repeated this sentiment, with some variation of statement, in 1797 (ibid. vol. i. p. 217.) To these I added a number of other considerations in 1799 (ibid. vol. iii. p. 14 & seq.), showing the dissimilitude of these two acid products. More was offered on this point in 1801 (ibid. vol. iv. p. 184-5), exhibiting still further the difference between the acid formed among corrupting materials, and the acid obtained by decomposition of salt-petre. In the same volume, p. 190 and 262, there are other views of this question, intended to put my meaning out of doubt.

That part of the history of putrefaction which I have attempted to explore, and to which I have called the attention of the learned world, *is the series of phenomena which occur from the moment of the formation of septic acid by any of the processes which produce it, to the fixation or neutralization of it by pot-ash.* My attention was directed to this period, because it had been overlooked by almost every observer, as it yet is by the greater part of scientific men; although it certainly embraces the most important portion of the facts connected with animal and vegetable disorganization. The history of the *nitrous acid had, I well knew from*

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from the beginning, been laboriously and profoundly explored. With that I professed to have little to do, but employed myself chiefly in investigating the character and operation of *the acid of septon,* before it underwent the alteration which gives it the qualities possessed by the *nitrous.*

Still it is taken for granted by the philosophers of our day, that the acid obtained by decomposition and distillation of salt-petre is the very same and identical thing which was formed in the midst of corruption, and among putrefying materials, by a chemical combination of septon and oxygen. This is as confidently asserted by them as if it was a matter of fact. Indeed, it is so absolutely credited and taken for granted, that the *natural history* of the acid, from the time of its formation to the time of its association with pot-ash (which is the most interesting by a great difference), has been almost wholly overlooked; while its *artificial history,* after its separation from pot-ash (by far less important), has attracted an uncommon share of attention.

But men of science did not always confound things at this rate. There was a time when opinions were stated as such, and not obtruded upon the world roundly and positively for realities.

Fourscore years ago the German chemists knew that salt-petre, formed from *distilled nitrous* acid and pot-ash, by synthesis, in a laboratory, differed from the neutral salt produced when septic acid combined with that alkali by the natural process, in heaps of dung and rubbish. Ludwig had remarked, that notwithstanding all attempts to saturate them exactly, there would be some acrimony left in this *nitrum regeneratum;* to correct which a portion of quick-lime must be added.

The difference between natural salt-petre and regenerated salt-petre was so considerable, that the latter was by some affirmed to be unfit for making gun-powder. It was declared to have too little strength for that purpose. Others, however, were of a different sentiment, and declared *regenerated* nitre as good as the *natural.* (Junckeri Conspectus Chemiæ, tab. lxi.)

Stahl knew the destructibility of pot-ash: for when salt-petre was exposed to a torturing fire, for a long time, in an open vessel, it was wholly dissipated; both the acid and alkali disappearing. And he also knew, that if a mixture of salt-petre and charcoal was deflagrated in a tubulated retort, that both the acid and the alkali would be destroy-

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ed or decompounded; scarcely a vestige of pot-ash being found in the retort, or of nitrous acid in the receiver.

Kunkel too has ascertained, by experiment, that putrefying blood afforded both septic acid and fixed alkali enough to form salt-petre. From one hundred pounds of corrupted blood, he obtained, by evaporation and crystallization, more than five pounds of genuine nitre. Juncker himself was perfectly aware of the convertibility of alkaline salt to nitre, by exposure to fœtid exhalations.

When an alkaline salt has been exposed too long to intense fire, the watery parts are expelled, and the salt itself degenerates to an earthy, fixed, and insipid consistence.

The following curious fact is told of the convertibility of nitrous acid into pot-ash:—If the alkali, in its dryest state, is mixed with spirit of nitre, and turned to *nitrum regeneratum*, and afterwards, by aid of charcoal in close vessels, this factitious salt-petre is decomposed and turned back to *nitrum fixum*, or pot-ash, there will be found remaining a much larger quantity than was originally made use of. They both contain septon, and their constitution is probably more nearly allied in many particulars than is usually supposed.

It is the vulgar opinion that acids and alkalies are the opposites of nature, because of the effervescence they make on uniting, &c. but the Stahlians were of a different belief, thinking that their readiness to combine with each other indicated rather a similarity of constitution and a homogeneity of corpuscules. (Juncker. Consp. tab. vii.)

There is something uncommonly singular in the limestone caverns which furnish the salt-petre earths in Virginia, North-Carolina, and Tennesse. These excavations are composed altogether of rocky strata of calcareous earth, or carbonat of lime. They extend for considerable distances towards the centre of the mountain in whose sides they exist. Neither rain nor sun-shine ever reaches them. In the bottom of them a salt-petre earth is found, which, after lixiviation, if carried back and replaced, becomes gradually impregnated with salt-petre again. There are no corrupting materials here to supply septic acid. There is no process of incineration to afford pot-ash. All that is discoverable is the crumbling and mouldering of the calcareous rocks which form the caverns. And in this rubbish or scrapings of the floors are found a large portion of *calcareous*, and a smaller quantity of *alkaline* nitre. To detach the portion of acid which is associated with the lime, the hunters and salt-petre makers find it necessary to add a parcel

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parcel of wood-ashes to the earth brought out of the caves. The alkali of the ashes attracting the acid from its calcareous basis, furnishes a greater quantity of salt-petre, and of a better quality than can be procured by any other method. This *artificial* nitre, added to that previously formed by the *natural* process, makes up the amount which is procured. From a careful consideration of the facts afforded by the *natural* process of salt-petre forming in these vast subterranean excavations, there appears no other way of accounting for the production of both a *portion of the native pot-ash and all the nitrous acid, than by the decomposition of the calcareous rocks,* and the formation of the two materials of salt-petre from the constituent parts of these strata of limestone; a part of which seems to change into pot-ash, and another part into nitrous acid!

A somewhat similar fact occurs with regard to the conversion of volatile alkali into nitrous acid. If corruption, instead of going on in open air, is made to take place in a closed apparatus, the ammoniac gradually disappears, and the mass changes to a sulphureo-terrene, or, in some measure, *to a nitrous consistence.* This is analogous to the changing of nitrous acid to ammoniac during the solution of tin, and in other experiments.

Beccher plainly affirms the mixture of septic matter with the water of the ocean. He supposes a quantity of nitrous matter derived to it from the various kingdoms of Nature, whereby salt-petre is superadded to its common salt. This corresponds to Newman's experiment of obtaining *aqua regia* from sea-salt, and of Pringle's experiments of some of it promoting corruption. (See Trans. of American Philosophical Society, vol. v. p. 140.)

But above all the pieces that I have met with in the older writers, *Hoffman's Essay on the dissimilar Nature and Properties of Fixed Alkaline Salts* contains the most pointed evidence of difference between pot-ash after it *has been* combined with septic acid, and pot-ash which has *never been* so combined. His observations are so remarkable that I deem them worthy of a full translation:—"It has been hitherto firmly believed, by experienced chemists, that the nature of the lixivial salts prepared by *calcination* and *incineration,* was not different, but the same, and that they possessed *equal* fitness for the purposes of medicine and the arts; and, indeed, this would seem to be the case, if we merely consider their mixture with acids of various strength, their effervescence, their saturation, and conversion into *salia salsa,* or neutral salts. But it will be more clear-

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ly and undeniably evident, from experiments I am about to relate, that the constitution, composition, and qualities of these alkalies is *not the same*, and that a peculiar and specific difference prevails between them.

" 1. *Nitrum fixum*, or pot-ash prepared from salt-petre, deflagrated with charcoal, undergoes strong ebullition on having oil of vitriol poured upon it, and exhales a disgusting smell like aqua fortis; but this does not happen if the experiment be made with salt of tartar or of wood-ashes.

" 2. If salt of tartar, or alkaline salt (as pot-ash is called by way of distinction), is melted in a crucible, and powdered charcoal be added to it in its melted state, to the amount of about half the quantity of the pot-ash, then the mass, on being poured out, is of a reddish colour, of a fœtid, sulphureous smell, not unlike the *hepar sulphuris* ordinarily prepared from salt of tartar and common brimstone: but if the *fixed nitre*, or that caustic salt which is prepared with regulus of antimony and salt-petre, is melted, and charcoal dust added to it in fusion, it does not undergo the smallest alteration of colour, smell or taste, but remains white and very pure.

" 3. If with the salt of tartar, which is usually prepared by an extemporaneous process of burning together two parts of salt-petre and one of tartar, there be mixed a tolerably strong spirit of vitriol, instantly an odour like aqua fortis rises; but this never happens with pure salt of tartar, or any lixivial salt prepared from vegetables by incineration.

" 4. There is a remarkable difference between the salt of tartar, prepared from crude tartar, *with* an admixture of salt-petre, and that obtained *without* it, as well as between the former and lixivial salt itself; in this respect particularly, that if you pour oil of vitriol gently and gradually upon the former, a stinking, disagreeable odour arises, and the surface becomes covered with a blackish pellicle, together with rising froth; and, indeed, the body of the liquor itself becomes blackish: but most certainly these appearances never happen to pot-ash.

" 5. Clear glass can never be made from salt of tartar and sand; but glass of elegant transparency can be formed from the alkaline product of salt-petre and tartar (§ 3), and likewise from pot-ash.

" 6. There exists no doubt among those who are addicted to chemical researches, that a highly caustic and alkaline salt may be prepared from two parts of salt-petre and one of regulus of antimony, melted together by a strong

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strong fire. This, freed from foreign particles by solution in water, and afterwards dried, acquires an *intensely red* colour by being mixed and digested with highly rectified spirit of wine. But if the like spirit of wine be poured upon the caustic alkaline salt prepared from two parts of salt-petre and one of tartar, dissolved and purified by water in the same manner, there is no tinge or colour of red to be seen.

"And although a tincture of extraordinary virtue, and of a *golden* colour, may be obtained by pouring highly rectified spirit of wine upon the salt of tartar prepared from *tartar alone*; yet the like never happens when the experiment is made with pot-ash, or with that salt of tartar which is formed from *salt-petre* and tartar.

"7. The waters of many of the medicated springs which are cold, and called *acidulous*, or are hot, and called *thermæ*, on undergoing a gentle evaporation, deposit a lixivial salt, which nearly resembles other salts: in this, however, there is a difference, that these lixivial salts of the springs, on being melted with powdered charcoal, are changed to *hepar sulphuris*: but this has not been observed to happen when the like experiment was made with the caustic alkali by regulus of antimony, nitrum fixum, or the alkali from salt-petre and tartar.

"These experiments amply and satisfactorily prove that *common salt of tartar is widely different* from the *alkaline salt which is an ingredient of salt-petre:* for the former, by affusion of oil of vitriol, salutes the nostrils with a fœtid smell, forms a less transparent glass, partly mingles with spirit of wine, and strikes a colour which the nitrum fixum, or the alkali from salt-petre and tartar never do; while, on the other hand, those alkalies which are ingredients of salt-petre, exhale, on being mingled with oil of vitriol, *the nasty odour of aqua fortis.*

"Hence it is correctly inferred, that salts, and other bodies of a very fixed nature, may conceal within them volatile, sulphureous and oily particles, by an attraction too strong for the *most intense fire to overcome;* while, at the same time, their connection is such, that, by virtue of the *attractions* consequent upon mixture with other bodies, these hidden materials may regain their distinct characters, and burst again upon the view."

As these facts were published as long ago as 1736, it might be presumed that the gentlemen who undertake to judge of scientific discussions were acquainted with them. But finding of late, that even they who criticise and publish

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lish opinions to the world knew nothing about them, I determined to exhibit them in an English version. Why are all these instructive phenomena forgotten and overlooked? Wherefore are the truths disregarded or rejected which our predecessors laboured so hard to accumulate?

But to show the distinction in this case the stronger, the authority of Boerhaave might be cited. This great chemist affirmed (2 El. Chem. proc. 134) in the account he gives of Glauber's spirit of nitre, "that there was never any acid discovered, in any single experiment, like the acid procured by that process." And I am of the same opinion. This acid, and all its derivatives, are certainly *artificial* products, and exist no where but in the laboratories and in well-stopped vessels; while the original septic acid exists copiously among the ruins of organic matter all over the earth.

On the whole, I wish the gentlemen who attend to this subject to consider two things; first, that pot-ash, or the vegetable alkali, assumes an endless variety of forms, without being adulterated by foreign ingredients, and is not that simple, uncompounded element which some of them pretend to think it: the other is, that not a particle of *nitrous* acid ever existed in Nature; in the laboratory of nature *septic* acid is formed, and oftentimes associated to pot-ash; and by that association, and by the process employed to extract it *by art*, THE SEPTIC ACID IS CHANGED TO THE NITROUS. And it is a most happy event for mankind that it is so; for thereby an alteration is wrought both in the constitution of the acid and of the alkali, very beneficial to living beings. Such being the facts, it clearly follows, that all the experiments made upon *nitrous acid and its derivatives* have no bearing or application to the *original septic acid as engendered or evolved in the putrefactive process.* The man must be very dull who affirms that *nitrous compounds* are the common agents of pestilential mischief; though he must be still more dull if he denies *oxygenated septon*, in its various forms, to be the noxious cause which alkaline salts and earths universally neutralize and subdue.

Through want of attention to these points of difference, it is probably to be understood wherefore my meaning has been so often perverted. Without intending to think or to reason wrong, the philosophical men have charged me with mistakes from which I hope I am free.

I request that they who have misunderstood me may peruse this piece, and reconsider what they have written

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and read. Particularly I request this of CHRISTOPHER ALBERT, who printed a Dissertation at Erlangen in 1798, *de Luis Bovillæ Origine et Naturâ*; and of NATHANIEL WEEKS, who defended an Essay *de Flava Febre*, at Edinburgh, 1799. I would make a similar request of GEORGE LEE, of Philadelphia, if death had not removed him from us; though this amiable and candid man declared to me, in a letter written a little before he became disabled by his infirmities, *that he would never contradict me again.* I give the same invitation to HUMPHRY DAVY, of the Royal Institution, and to the Monthly Reviewers, of London; to D. J. C. SMYTH, to Mr. GUYTON, and to all the advocates for destroying contagion by fumigation with nitrous vapour and oxygenated muriatic gas, on both sides of the Atlantic; and to the writers of speculations upon infectious diseases, who have honoured either myself or my doctrine with their notice, in Philadelphia or Boston. As to the critical remarks made upon Dr. Bay's Dissertation on Dysentery, in Med. Rep. vol. i. p. 241, they were inserted at my suggestion and request, by the learned and polite gentleman who penned that Review. When chemists shall have been taught, by further experiments, how ignorant they are of the true constitution of *nitrous acid*, and, from additional observations, how much they have yet to learn concerning the exact composition of the *vegetable fixed alkali*, they will lay aside a part of the positiveness with which they have conducted this discussion, and practise somewhat more of condescension and forbearance.

New York, March 20, 1803.

A Memoir on Vinous Fermentation; by CIT. THENARD.

THE vinous fermentation has hitherto received more attention than the acetous or putrid, not perhaps that it has any thing in it more remarkable, or more worthy of our consideration, but because it is in the natural order of things, to take more interest and set more value on what is of most immediate utility.

The date of the discovery of the vinous fermentation appears too well established to be called in question. All historians agree in saying, that the most ancient nations knew how to prepare spirituous drinks. It ascends therefore

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fore to the remotest times; and, if we pay any credit to the poets, we must carry it back to the fabulous ages. Indeed it would be surprising, if it escaped the notice of the earliest of men. An ebullition arising spontaneously in a liquid, a whole mass rising of itself, a sweet liquor becoming vinous, the change of a saccharine matter into an ardent spirit, are all extraordinary things, calculated to strike the attention, and awaken the desire of tracing them to their first causes. Accordingly there is no phenomenon more early observed, and none that has been the subject of more consideration, or has given birth to more experiments; yet, from one of those contrasts that rarely occur in the annals of science, though it has been the most studied, there is not perhaps one, with which we are less acquainted. It has been a rock, on which the endeavours of chemists, in all ages, have split. Beccher, so celebrated for his subterranean physics; Stahl, the Nestor of the ancient chemistry; Boerhaave, whose ideas were so great; Rouelle, to whom science is indebted for part of the progress it has made during the last half century; and Macquer, that master in the art of writing, all failed in their attempts to penetrate this mystery of Nature. Lavoisier, who was capable of surmounting the greatest obstacles, is the only person, who, enlightening the whole sphere of chemistry by his genius, travelled this obscure path without wandering out of his road. His enquiries into fermentation will ever remain a model of vegetable analysis. In this, as in every thing else he did, he observed that strictness of deduction, and accuracy of operation, which are his characteristics, and which may be considered as the source of the splendid discoveries, that will for ever illustrate his name. Still, notwithstanding the excellence of what he did, he was far from leaving nothing more to be done. Though he shed great light on this part of science, the obscurity with which it was enveloped was so great, that it is still seen only through the mist. This is a truth that did not escape himself; he was well aware that he had only laid open the path to the goal, which no doubt he would have reached, no doubt he would have completed the career he had begun with such success, had not death, jealous of his fortune and glory, robbed science of his labours.

All we know of fermentation in fact is confined to this, that the saccharine matter is converted into alcohol and carbonic acid by means of an intermediate substance. But what is the nature of this substance? and how does it act

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act on the sugar? These two grand questions form the subject of the present memoir; questions that have been often attempted, without ever having been solved. Some have thought, that the fermenting principle resided in the extractive matter. Others would have it to be in the mucilage, because this more frequently accompanies the extractive matter. Some, again deceived by the presence of tartar in wine, have imagined they found in this the true ferment; but if, instead of confining themselves to the fermentation of the must of grapes, they had turned their attention to that of other juices, in which analysis cannot discover the existence of this salt, they certainly would not have fallen into this error. Others, lastly, inconsiderately adopting all these opinions, have asserted, that a mixture of these different matters preside as it were over fermentation, effecting the decomposition of the sugar, and its conversion into alcohol.

Of these hypotheses, some are evidently false; others are seducing, and acquire from specious reasoning some degree of probability. But before we admit them, we must consult experience; we ought, leaving them all out of the question, to deduce from observation the theory, which we are too apt to form beforehand. If the genius of Stahl, instead of giving birth to phlogiston, a being that never existed but in the brilliant imagination of that extraordinary man, had interrogated nature by means of experiment more than he did, perhaps it would not have gone astray; perhaps Stahl would have discovered the truth, and deprived France of the glory of having produced the author of the modern theory of chemistry.

Such is the course I have pursued. Before I formed or adopted any system, I observed facts, and deduced from them consequences, which, it appeared to me, must guide us to the view of what passes in liquors under fermentation. But in a subject of such nicety nothing is more easy than to deceive ourselves; and it is particularly for the purpose of correcting my notions, if they be not just, that I submit to the world the result of my inquiries.

My first observations were made on the juice of gooseberries, which I had strong reasons to prefer to any other; its fermentation proceeding with most celerity, so that it is consequently best calculated to throw light on the causes that produce it. All my researches were directed at first to discover the matter, that serves as a ferment. It would be making a great step, and almost resolving the problem, or at least discovering a number of truths not yet

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yet known, to determine the nature of this matter, and to ascertain whether it be always one and the same, or whether there be several that possess this property. This important question had struck me long ago: I had even meditated upon it occasionally, and promised myself to attempt its solution, when the Institute proposed it as a subject of a prize. This was an additional strong motive to my pursuing it. I was far from being disposed to admit several fermentative principles; every thing led me to believe, that there was but one, and that it was none of those hitherto suspected, since in fact neither extractive matter, nor mucilage, nor tartar, &c. acts upon sugar. But this required positive demonstration; and though I have yet no absolute proofs of it, as it is by no means demonstrated that there are several, and one is observed on all occasions, this opinion seems to me at present to deserve the preference.

Through a linen cloth of close texture I pressed out the juice of a killogramme of gooseberries. It was turbid, and held in suspension a slightly glutinous matter, which I separated by the filter, and washed in a large quantity of water. As nothing is to be neglected in experimental science, and the most trifling fact frequently leads to important consequences, I subjected this matter to a regular examination. I first mixed it with sugar and water, to see whether it would cause them to ferment; and I soon perceived many bubbles of an elastic fluid to be extricated, which I found to be carbonic acid. The effervescence continued a week, and at the end of this period the liquor was a pleasant drink, but slightly saccharine; it contained a great deal of alcohol, and might easily have been mistaken for a wine not completely made. It may be supposed I redoubled my zeal and attention in the examination of a substance, that offered me what I sought. It was natural first to inquire, whether the whole of it were adapted to decompose sugar; but a sixth part of its weight being scarcely able to effect this decomposition, I concluded, that it contained the fermentative principle only in small quantity. This I attempted every method in vain to separate, and obtain apart: nothing therefore remained for me, but to compare it before and after it had served to produce fermentation. It was not apparently altered by this process; being still insipid, insoluble both in water and in alcohol, and affecting neither infusion of litmus nor syrup of violets; but on distillation it no longer afforded any trace of volatile alkali. This result, at which I was

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I was not surprised, and which a second experiment confirmed, was nevertheless a ray of light, that confirmed me in the course I should pursue. It showed me, that the germ of fermentation was of an animal nature, it agreed with the ideas I had before conceived, and gave to my suspicions an appearance of reality.

I now examined the juice of gooseberries with great care, to discover this animal matter, which I considered already as the true ferment. As it was insoluble by itself, it must be combined with some substance, that held it in solution. All the reagents I employed failing to answer the purpose, I had recourse to fermentation itself, and observed the phenomena produced by it under all circumstances. I made my experiments on nearly a litre of filtered and perfectly clear juice. The apparatus was placed in a stove, where the thermometer stood at 20°: it was not long before a fermentation was evident; a large quantity of carbonic acid was presently evolved; much froth was formed; the liquor lost its transparency, and it even became so turbid, that a sediment was thrown down, which was more evident as the fermentation approached its end. This sediment was of a yellowish white colour, glutinous, void of taste, grew brown on drying in the open air, and became slightly acid. Thrown on red-hot coals it burnt in the same manner as animal substances: distilled in a small retort it afforded a considerable quantity of carbonate of ammonia even crystallized. It made sugar ferment with extreme promptitude. In short, it was a substance perfectly analogous to the yeast of beer.

I was eager to try whether this phenomenon were general, as it ought to be according to my mode of reasoning: and in fact experience soon taught me, that it was common to all juice in a state of fermentation. The must of grapes, the juice of cherries, pears, peaches, and apples, and the decoction of barley and of wheat, afford yeasts in their fermentation. The grape juice yielded more than the others, though less than that of gooseberries: accordingly it did not ferment so readily as the latter. The juices of cherries and peaches deposited nearly the same quantity: those of pears and apples afforded very little, which is the reason why their fermentation is so slow. I could have wished to have had a greater number of fruits at my disposal, that I might have varied my experiments more: they were sufficient, however, to prove, that, where alcohol is formed, a sediment of yeast is commonly formed likewise. If they who have

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have any doubt on the subject remaining will maturely consider the two following experiments, I believe they will find themselves convinced. I knew that honey diluted with water would gradually be converted into a liquor containing spirits. Cullen informs us, that the saccharine urine of a diabetic patient undergoes in time the same change. Accordingly I set both of these to ferment, and the sediment of yeast was formed in each.

It may be laid down, therefore, as demonstrated, that in every spirituous fermentation an animal matter is deposited, similar in all respects to that arising from wort, possessing absolutely the same properties, and in particular that of decomposing sugar, and converting it into carbonic acid and spirit of wine. This gives rise to a new question, that naturally presents itself, and ought next to occupy our attention. Is the yeast generated in the process of fermentation, or rather was it already formed, and did serve as a ferment?

I must confess we have yet no experiments, which directly prove, that Nature employs this substance exclusively to effect the conversion of sugar into alcohol and carbonic acid. For why should it be deposited when the fermentation has taken place? It may be said indeed, that the sugar holds it in solution, that it can dissolve more than is necessary for its decomposition, and that then the excess is precipitated. But this theory is feebly supported by experiment. Is this a sufficient reason to reject it altogether? Have we not several instances of compounds, that require much time for their formation? And this perhaps is what occurs in the juices of fruits, where the ferment and the sugar are long in contact with each other. What is certain, or what at least appears probable, is, that if yeast be a product of fermentation, as all liquors that ferment deposit it, no doubt it owes its origin to one and the same soluble substance, from which it differs little, and which produces it by its reaction on the sugar.

Whichever of these two opinions obtains the preference, after more numerous trials, as I have no doubt that yeast is an immediate principle of vegetables, and in consequence acts an important part in the phenomena both of Art and Nature; as I am likewise persuaded, that, if any other substance capable of exciting fermentation exist, it is in the highest degree analogous to yeast; that it differs from it very little; that it is composed, like it, of azot, oxygen, carbon, and hydrogen; and lastly, that it has,

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no doubt the same mode of acting on sugar: I shall proceed to exhibit with the greatest care the properties of this matter, which I shall henceforward term ferment, and in particular consider well its action on the saccharine principle, in order to establish the theory of fermentation. This theory, even supposing yeast not to exist already formed, but to be produced in fermenting juices, will still be of utility, and capable of various applications, as will appear below.

I shall not recapitulate the physical qualities of ferment, as I have mentioned them several times already; but I shall confine myself to its chemical properties, which alone are of essential import. It has no taste. It neither reddens infusion of litmus, nor changes syrup of violets green. The putrid fermentation, which in time it undergoes, is in every respect similar to that of animal substances. By desiccation it loses three-fourths of its weight, and this loss consists entirely of water. Thus dried it is still capable of exciting fermentation; it is by no means decomposed, and may be preserved in this state without alteration for an indefinite time. We may avail ourselves of this property, to convey it to places at a distance from any brewery, or with which it is so difficult to keep up an intercourse, that fresh yeast could not be sent to them, particularly in summer, without becoming putrid. Distilled in a small retort, and urging the fire so far as this would bear, eight parts of ferment left a residuum of 2.83 of coal; and I obtained 1.61 of water, 1.31 of oil, and 1.46 of muriat ammonia on adding muriatic acid. Finally, I collected 0.33 of gas, containing a fifth of its bulk of carbonic acid, and which, when this was separated from it by potash, burnt like carbonated hydrogen, and required 1.5 of oxygen for its combustion. From this experiment we see, that ferment contains in particular a great quantity of carbon.

Water at the temperature of 12° or 15° does not dissolve $\frac{1}{200}$ of ferment: indeed, it dissolves so little, that after standing upon it several hours, and being well filtered, it has scarcely any action upon sugar. Boiling water occasions it to undergo a decomposition, which I shall examine in another memoir.

Nitric acid, even diluted with water, at eighteen degrees, decomposes it also: it converts it into grease; and there is evolved from it at first azot mingled with carbonic acid, and afterward nitrous gas at the same time.

Potash acts upon this substance in the same manner as upon animal matters, and the phenomena in both cases are

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perfectly the same: with each it forms a saponaceous substance, and a great quantity of ammonia, that it volatilizes.

But of all the properties of ferment, no one is so remarkable, and at the same time so useful, consequently no one so much deserves to be studied, as its action upon sugar: this is interesting to men in every class of society, from the mechanic to the philosopher; to both by its products, and to the latter because it may be a fertile source of reflection and of new truths. It is much to be regretted, that Lavoisier did not pursue the investigation as he intended, and examine it with that care, which is conspicuous in all his labours. Who was more capable of giving birth to a theory of fermentation, than the author of the modern theory of chemisty? No doubt he was prevented from doing this by a concurrence of circumstances: and this theory, important as it is to science, has hitherto remained vague and hypothetical. Knowing the fermentative principle, it could not avoid naturally making a part of my researches: if I have not rendered it as clear as I hoped, at least the veil with which it was covered is removed, and it rests on reasoning confirmed by experiment.

To obtain the solution of this problem, I added together different quantities of ferment and sugar; I observed in every case what became of both; and I confirmed by farther observations what the preceding had suggested. Sixty grammes (927 grains, or nearly one ounce of ferment) not dried, and three hundred grammes (4630 grains) of sugar entered into fermentation readily, the temperature being 15° (centigrade=59° Fahrenheit.) In four or five days all the saccharine matter had disappeared; 51.5 litres (3041 cubic inches) of carbonic acid had been evolved; the liquor being filtered, and distilled to two-thirds, gave on a second rectification 863 grammes of spirit at 18°. The apparatus was so contrived, that nothing was lost: the receivers were cooled with common salt and ice. I found by synthesis, that this quantity of spirit was equivalent to 171.5 grammes of alcohol at 39°. The residues left after distilling the spirit were poured into dishes and evaporated to dryness: from the residuum of the second distillation nothing was obtained, but that of the first yielded about 12 grammes of a nauseous substance, slightly acid, and feebly attracting the moisture of the air. I wished to discover the nature of this acid, but there was too little to ascertain it. Lavoisier says, it is the acetous. Lastly, of the sixty grammes of ferment, there remained forty grammes

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mes of a substance, which I believed to be more animalized than the ferment itself. I was much surprised to find, that I obtained from it by distillation much less ammonia. Hence I suspected, that by mixing it afresh with sugar, fermentation would again take place, and thus all the azot would disappear. What I had foreseen occurred: at the end of seven days, having filtered the liquor, I obtained as a residuum thirty grammes of a substance, which on distillation gave no trace of volatile alkali. I was persuaded, that the azot was carried off with the carbonic acid gas. To convince myself of this, I collected near 41 litres of the carbonic acid in an inverted vessel filled with solution of caustic potash. The whole was absorbed, which leaves no doubt of its purity.

What then becomes of the azot? it ought to be found either in the residuum of the ferment, or in the residuum obtained by evaporating the liquor left after distillation, or in the alcohol: but the residuum constitutes only half the ferment employed; the quantity of matter left by 300 grammes of sugar and sixty of ferment amounts only to twelve grammes; and neither of these yields any ammonia on distillation, while ferment affords a great deal. If these observations be just, if I have accurately noticed all the phenomena, if nothing have misled me, we cannot avoid concluding, that the azot must exist in the alcohol. Yet I have sought in vain to discover its presence in this fluid, in ether, and in the acetous acid: on passing these through tubes heated red-hot in the fire, and burning the gasses in Volta's eudiometer by means of the electric spark, we obtain such small quantities, that they are by no means sufficient to decide the question: 24 or 25 parts of gas yield at most one of residuum.

I have made several other experiments however, which hitherto tend to show, that azot may exist in such a manner as not to be discovered on distillation, consequently that it may be one of the constituent principles of vegetables, though in general when distilled they afford no ammonia. But as I have not repeated these experiments, and they are of such importance, that we cannot be too reserved in announcing them, I purpose to revise and vary them; I will endeavour to appreciate all the circumstances, and if I obtain convincing proofs, I will not delay communicating them to the public.

However this may turn out, these results afford us sufficient light, to see what passes in the act of fermentation. In this respect I cannot agree in opinion with Lavoisier.

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I do not believe as he does, that all the carbonic acid formed proceeds from the sugar. How, on such a supposition, can we conceive the ferment to act upon it? I think, that the first portions of acid are owing to a combination of the carbon, of the ferment, and the oxygen of the sugar, and that the ferment gives rise to fermentation by abstracting from the sugar a portion of this principle. To render this idea more clear, I suppose a particle of sugar to be formed of eight parts of oxigen, four of carbon, and one of hydrogen, which is not very remote from the truth, according to the experiments of Lavoisier: one of these eight parts of oxygen will unite with a fourth part of the carbon of ferment, and then, the equilibrium between the principles of the sugar being disturbed, they will combine in a different manner, so as to form carbonic acid and alcohol. The ferment has in fact a strong attraction for oxygen; as is proved by its decomposing air with the greatest facility; when acetous and carbonic acids are produced, and the azot is disengaged. If pure air be employed instead of common air, the re-action is still more speedy. I have introduced 15 grammes of ferment into a vessel filled with a litre of pure air; I opened it over quicksilver; a fifth of its bulk was absorbed; the ferment was grown sour, all the oxygen gas had evidently disappeared, and was converted into carbonic acid: the temperature was 15°.

From what has been said we see what becomes of the carbon of the ferment, and we shall learn what may become of its other principles, if we recollect the quantity of products resulting from a given quantity of matter subjected to fermentation, and comparing the nature of the one with the other.

From sixty grammes of ferment, and three hundred grammes of sugar we obtained, carbonic acid 95 grammes, pure alcohol 171.5; extractive matter, slightly acid, and containing no azot, 12; residuum of the ferment 40. These 40 grammes still contained 25 of ferment, so that 35 only had been employed for the decomposition of the sugar; and these 35 were reduced to 15 of a white substance insoluble in water, incapable of acting upon sugar, yielding no ammonia on distillation, and leaving a coal, that burns with scarcely any residuum; in short, exhibiting characters that distinguish it from all other substances, induce me to consider it as a peculiar matter.

It appears then, that ferment takes oxygen from sugar, not only by means of part of its carbon, but also by means of

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of part of its hydrogen; for the quantity of carbon given out by ferment is too small, to be the sole germ of fermentation. The azot disappears, and enters perhaps into the composition of the alcohol; the other principles of the ferment form acetous acid, and a peculiar insoluble white matter, which is precipitated. The acteous acid remains in solution in the liquor left after distillation, with an extractive matter, proceeding no doubt from the sugar, and foreign to it.

It is not probable, that the elements of the sugar, in their re-action upon each other when the equilibrium between them is disturbed, form water: there is very little hydrogen in sugar, and a great deal in alcohol; and besides, on adding together the quantity of carbonic acid, of alcohol, of extractive matter, and of residuum, we have a deficiency of one eleventh only of the matter by which they were produced. This loss must be attributed to the water the sugar contains, and is by no means owing to alcohol being carried off by the carbonic acid. Of this I have been convinced myself by receiving more than thirty litres of this gas in caustic potash; and by distillation and rectification I obtained only a few grammes of fluid, which had so little taste of spirit, that it was not to be distinguished.*

This theory appears to me so much the more probable, because it perfectly accords with facts; and this truth becomes particularly striking when we compare them. I am far, however, from considering it as complete. Time no doubt will bestow on it the perfection it wants; and I hope myself soon to add to its evidence. I know not whether I shall be able to discover what becomes of the azot of the ferment: but I shall ascertain without difficulty, whether the residual matter obtained, which I consider

* Cit. Seguin has laid before the Institute a very different theory of fermentation. He thinks, that in this process water is decomposed, that its oxygen unites with the carbon of the ferment, and produces carbonic acid, while its hydrogen combines with the sugar, and converts it into alcohol. For this theory to be admissible, we should obtain more alcohol than there was sugar; but the fact is, little more than half its weight is produced, and besides, supposing all the carbon of the decomposed ferment to be converted into carbonic acid, at most not above a sixth part of the quantity actually produced would be formed, as we may easily convince ourselves from calculations already established. It may likewise be objected to this theory, that sugar contains a great deal of oxygen, and alcohol very little.

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sider as a peculiar substance, be a product of fermentation as I believe; whether the sugar contribute to its formation which is possible; or whether it be ready formed, and merely precipitated, which is contrary to all probability. The experiments, that remove all my doubts on this head, I shall relate in a second Memoir, in which I shall not only elucidate such points in this as may appear equivocal, or at best resting on too slight foundations, but I shall also exhibit all the particulars that result from them. Here, on the contrary, I have avoided them as much as possible, and endeavoured to consider the phenomenon only in a general way.

Chemical Analysis and Properties of Arseniated Hydrogen Gas, by PROFESSOR TROMSDORFF.

THE immortal Scheele, in his essay on arsenic and arsenic acid, mentions an inflammable arseniated gaseous fluid, of which he says: "*Hinc intelligas, hunc aerem inflammabilem esse, regulumque arsenici solutum tenere.*" Scheele states, that he obtained this gas during the solution of tin in arsenic acid. The properties of this gas, as pointed out by him, are the following. Arseniated hydrogen gas is insoluble in water; it does not render lime-water turbid; mingled with atmospheric air, no diminution of bulk ensues; on bringing the flame of a taper in contact with this mixture, a loud detonation follows, and metallic arsenic is deposited. Interesting as the observations here pointed out must appear to every chemist, the object has been neglected by succeeding operators.

Proust is the only philosopher who mentions this gas: he obtained it by digesting arsenious acid and zinc, in dilute sulphuric acid; on burning the gas, he obtained sometimes arsenious, at others arsenic acid. Being persuaded that the formation and properties of this gas deserved a closer examination, I instituted a series of experiments, the results of which are as follow.

Methods of obtaining arseniated Hydrogen Gas.

1. There are a variety of processes for obtaining arseniated hydrogen. It is produced by heating tin filings in liquid arsenic acid. This method is the most expensive and

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and most tedious. During the evolution of the gas in this process, arsenic, alloyed with tin, is precipitated, and the fluid obtained, holds in solution arseniate of tin.

2. It is likewise formed by treating in a similar manner, arsenic and iron with muriatic acid.

3. Arseniated hydrogen is also produced by heating a mixture of arsenious acid, iron filings, and muriatic acid. The fluid, in this case, contains muriate of iron and muriate of arsenic.

4. Tin filings and arsenic acid yield this gas under similar circumstances.

5. Four parts of granulated zinc and one of arsenic, treated in a similar manner with sulphuric acid, previously diluted with two parts of water, afford arseniated hydrogen very readily.

The gas obtained according to either of these processes, is nearly alike, but that produced according to the last process seems to be the most perfect gas, for it contains no excess of hydrogen. When arseniated hydrogen is produced by means of zinc, arsenic, and dilute sulphuric acid, the quantity of arseniated hydrogen is less than the quantity of hydrogen which would be obtained in decomposing water in a similar manner, without the interposition of arsenic. The residue, after the evolution of the gas has ceased, contains metallic arsenic; part of the hydrogen must therefore have acted on the oxygen of the arsenic acid, in order to reduce it to the metallic state. From what has been stated, it appears that arseniated hydrogen contains arsenic in a metallic state, and not in the state of arsenious, or arsenic acid. This will become more obvious in the sequel of this paper.

Physical Properties of Arseniated Hydrogen Gas.

Arseniated hydrogen is a permanent elastic aeriform invisible fluid. It is a true chemical compound. Proust asserts that it deposits arsenic: This, however, I have never been able to observe, if the gas were *pure*. It has an alliaceous fetid smell. It extinguishes burning bodies. It is not absorbable by water; but when this fluid is freed from atmospheric air, it takes up a small quantity of the gas which becomes disengaged again by mere agitation. It does not change the colour of tincture of litmus. The specific gravity of arseniated hydrogen is, at 28′ barometrical pressure = 0,5293, or, one cubic inch (old French measure)

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weighs 0,2435 grains. It is therefore lighter than oxygen, nitrogen, atmospheric air, carbonic acid, nitrous gas, ammonia, and gazeous oxyde of carbon, but heavier than hydrogen and sulphurated hydrogen gases. It is absolutely fatal to animal life.

Chemical Properties of Arseniated Hydrogen Gas.

Arseniated hydrogen, mingled with atmospheric air, suffers no chemical change, but mere dilution. The same holds good with respect to nitrogen. When mingled with nitrous gas, a diminution of 0,02, or 0,03 takes place, which sometimes even amounts to 0,05. To ascertain the nature of this gas, I mixed two parts of arseniated hydrogen with one of nitrous gas, and gradually added oxygen, till no further diminution of bulk ensued. On presenting to this mixture a lighted taper, a loud explosion took place, accompanied with flame. Probably part of the oxygen added, remained uncombined; for a mixture of two parts of nitrous gas, and three of arseniated hydrogen, could not be inflamed by the taper; arseniated hydrogen is miscible with hydrogen, with carbonic acid, and with ammonia in all proportions.

Into a cylinder half filled with arsenic and hydrogen, I sent up bubbles of oxygenized muriatic acid gas. The bulk of the gas was diminished, heat was evolved, and metallic arsenic was deposited in a crystalline state. On adding to the mixture an additional dose of oxygenized muriatic acid gas, white fumes appeared, and the deposited metal vanished. The same experiment was repeated successively, taking care to add no more of the latter gas, than was just sufficient to occasion the precipitation of metallic arsenic. The collected metal yielded nitrous gas, by the affusion of nitric acid, and on adding to this mixture muriatic acid, arsenic acid was produced. The arsenic deposited in the manner stated before, when laid on ignited coals, volatilized in thick white fumes, yielding arsenious acid. The precipitation of metallic arsenic must be ascribed to the decomposition of the oxygenized muriatic acid gas; the oxygen of this gas uniting with part of the hydrogen of the arseniated hydrogen, and forming water, and thus separating the arsenic. For the arsenic is capable of being oxyded by the muriatic acid. Should it be imagined, that arsenic existed in arseniated hydrogen, in the oxydized state, and that it became precipitated by the oxygenized muriatic acid robbing it of its oxigen, we suppose things analogically erroneous, for the oxygenized muriatic

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muriatic acid is more capable of giving out oxygen than of taking it. The experiments of Chenevix seems perhaps hostile to this assertion; but the experiments of this philosopher merely prove that the oxygenized muriatic acid is capable of combining with an additional dose of oxygen, and constituting with it a hyperoxygenized muriatic acid. This certainly cannot be the case in the present instance, as will appear more evident from what I shall state presently.

I filled a cylinder in the mercurial pneumatic trough with arseniated hydrogen, and sent up into it as expeditiously as possible, a quantity of oxygenized muriatic acid gas. The result was evolution of heat, diminution of volume, and the inner sides of the cylinder became covered with a kind of dew. A formation of water had therefore actually taken place in this experiment. Into another dry cylinder half filled over mercury with arseniated hydrogen, I introduced dry muriatic acid gas. In this case no diminution of bulk, no separation of arsenic ensued; no change at all took place. Repeating the same experiment, I introduced into the cylinder a small quantity of water; the muriatic acid gas was absorbed, and the residue was arseniated hydrogen unaltered.

Into a cylinder half filled with oxygenized muriatic acid gas, I passed gradually arseniated hydrogen in small bubbles at a time; in this case no metallic arsenic was separated, but thick white clouds appeared. On continuing the addition of arseniated hydrogen till no more white fumes appeared, metallic arsenic was deposited. It follows from this experiment, that when a *small* quantity of arseniated hydrogen is made to act upon a *large* quantity of oxygenized muriatic acid gas, part of the oxygen of the oxygenized muriatic acid gas combines, not only with the hydrogen of the arseniated gas, and forms water, but the metallic arsenic also becomes oxydised. Reasoning from this fact, we should be inclined to believe, that a mutual decomposition of both the gases could be thus effected; but this cannot be accomplished; a diminution of bulk indeed takes place to a certain extent, but the complete disappearance of both the gases cannot be effected. If the admixture of arseniatud hydrogen with this oxygenized muriatic acid gas, be continued no longer than white clouds appear, and the residue be then examined, it will be found to consist of hydrogen and oxygenized muriatic acid gases; and the mixture detonates at the approach of a taper. The oxygenized muriatic acid

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gas can only be separated with difficulty by long agitation, in contact with water, and it seems as if it were become less soluble in that fluid. If the separation of this gas be accomplished, the remaining arseniated hydrogen burns with a pure flame, void of alliaceous odour, and contains no vestige of arsenic, as shall be proved hereafter. From what has been stated, the following theory may be formed.

Arsenic, in combination with a certain portion of hydrogen, constitutes arseniated hydrogen gas. On presenting to this combination oxygenized muriatic acid gas, the oxygen of this gas combines with the hydrogen, which held in solution the arsenic, and the latter is separated. If more oxygenized muriatic acid be added than is necessary for this purpose, the portion of oxygenized muriatic acid gas does not act further upon the hydrogen, but merely upon the arsenic, and the latter becomes oxydised.

Hydrogen and arseniated hydrogen may be mingled without decomposing each other; the decomposition can only be effected by the contact of fire; but if we mingle hydrogen, holding in solution sulphur and oxygenized muriatic acid gas, the decomposition and formation of water is instantly effected. This is likewise the case with arseniated hydrogen gas.

Hitherto no combination of hydrogen with a metallic substance has been known; but it is highly probable, that such combinations may exist. This indeed seems to be the case in the formation of this gas on which we are treating. If this be admitted, a division of hydrogen must take place in the following manner; one part of it must unite with the oxygen of the oxygenized muriatic acid gas, to produce water; another part must fall down with the arsenic; and another portion remains combined with caloric, in the form of hydrogen gas.

Hydrothian acid gas and arseniated hydrogen do not act upon each other. To a mixture of equal parts of hydrothian acid gas, and arseniated hydrogen gas, I added gradually oxygenized muriatic acid gas; a diminution of volume instantly took place, accompanied with liberation of heat, and a deposition of yellow sulphurized arsenic (orpiment). On adding an additional quantity of gas, the precipitate acquired a beautiful orange red colour, and on continuing the addition of oxygenized muriatic acid gas, white clouds were produced, the precipitate detached itself from the sides of the vessel, and were

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were gradually converted into a pulverulent substance of a yellowish white colour.

The results of these experiments are obvious, and might have been expected *a priori*. But they may serve as a test to discover the presence of arseniated hydrogen, when contained in other gases.

I mingled one cubic inch of arseniated hydrogen with ten of nitrogen, and one of hydrothian acid (sulphurated hydrogen gas;) on adding to this mixture a small quantity of oxygenized muriatic acid gas, yellow sulphurized arsenic was instantly deposited. It is not improbable, that arsenic is likewise soluble in other gases, and in this case the hydrothian acid (liquid sulphurated hydrogen,) in conjunction with oxygenized muriatic acid, would prove a useful re-agent for discovering the presence of it.

A lighted taper immersed in a phial filled with arseniated hydrogen, is instantly extinguished; at the same time that the gas burns at the orifice of the phial with a lambent white flame, diffusing a disagreeable odour, and much white fumes, which are arsenious acid. If the gas be inflamed in a phial with a small orifice, the flame descends gradually down to the bottom of the phial, which becomes lined with a coat of crystallized metallic arsenic. In this case therefore the hydrogen alone burns.

If two parts of arseniated hydrogen be mingled with three of oxygen, and a taper be presented to the mixture, an explosion takes place; no metallic arsenic is separated, but the products are arsenious acid and water: soap-bubbles with the mixture of these gases, explode with a bluish white flame, leaving a white smoke and strong alliaceous odour. Equal parts of arseniated hydrogen and oxygen gases, fired in like manner, do not explode so loudly, but the report is accompanied with a much more vivid flame. A stream of arseniated hydrogen, issuing from a bladder fitted with a stop-cock, and set to burn in a large receiver filled with oxygen, yielded arsenic acid. The combustion in this manner is uncommonly beautiful; the gas burns with a blue flame of uncommon splendor.

Two parts of arseniated hydrogen, and one of oxygen gas, being detonated in a close vessel by means of the electric spark, left a small residuum; on repeating the experiment, the detonating tube broke during the explosion, which prevented the examination of the residue. From what has been so far related, it becomes evident that the constituent parts of arseniated hydrogen gas, are metallic arsenic and hydrogen. Were it possible to determine

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termine with absolute certainty, that no increase of volume took place during the solution of arsenic in hydrogen, the proportion of the constituent parts of this gas might be ascertained thus:

	French weight and measure.
One cubic inch of hydrogen, weighs - -	0,0353
One cubic inch of arseniated hydrogen, weighs	0,2435
Deducting the former from the latter, we get	0,2082

Which is the quantity of arsenic dissolved in the gas, consequently one cubic inch of arseniated hydrogen gas consists of 0,0363 hydrogen, and 0,2082 arsenic; and one cubic inch of this gas contains about $\frac{1}{4}$ grain of metallic arsenic.

Habitudes of Arseniated Hydrogen to Acids.

Into a phial, containing about eight cubic inches of arseniated hydrogen, I poured a half cubic inch of concentrated nitric acid. The moment the acid came into contact with the gas, the phial was filled with dense red fumes, a white flame pervaded the vessel, and a detonation ensued.

On repeating the experiment with dilute nitric acid, no ascension took place. The residuary gas was pure hydrogen, and the water contained arsenic acid. Fuming concentrated nitrous acid therefore is capable of oxydising the arsenic contained in this gas, at the same time that the oxygen of the acid burns with the hydrogen of the gas, and produces water; whereas weak nitric acid is only capable of oxydizing the arsenic, without acting upon the hydrogen present.

Into a glass tube, furnished with a stopper at one extremity, and closed at the other, I introduced eight cubic inches of arseniated hydrogen, to which were added two cubic inches of nitro-muriatic acid. After having agitated the fluids, on opening the tube under water, a diminution of one cubic inch took place. The residuary gas was pure hydrogen. It is remarkable, that during the addition of the nitro-muriatic acid, a black powder separated, which again disappeared on agitating the tube. Nitro-muriatic acid acts therefore in the same manner upon this gas, as oxygenized muriatic acid gas. It effects first a separation of the metallic arsenic, and then oxygenizes this metal. Liquid oxygenized muriatic acid decomposes arseniated hydrogen by mere agitation; the residue is hydrogen.

Muriatic

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Muriatic acid exercises very little action upon arseniated hydrogen; but merely dissolves a minute portion of it, which may be expelled again by heat. Concentrated acetic acid has no effect upon it.

Into a glass cylinder holding eight cubic inches of arseniated hydrogen, I poured one cubic inch of concentrated sulphuric acid, and then closed the tube. At the moment of the addition of the acid, the cylinder became lined with a coat of bright metallic arsenic, so as to resemble a looking-glass. On agitating the cylinder, the coating resolved itself into a brownish black powder, which, after a few days, assumed the colour of Kermes mineral. On opening the cylinder under water, a diminution of bulk ensued, and the residuary gas proved to be hydrogen. The experiment was repeated, and yielded the same results. The sulphuric acid employed in this experiment, had acquired a penetrating pungent smell, and was examined, after having been neutralized by ammonia, in the following manner:

Ammoniate of copper, on being mingled with it, acquired a greenish colour. Hydrosulphuret of ammonia instantly occasioned a copious yellow precipitate.

Water impregnated with sulphurated hydrogen gas, occasioned a similar effect. From the results of these tests it becomes obvious, that the acid consisted of sulphuric, sulphurous, and arsenic acid. In order to be certain in this respect, I mingled a few drops of liquid arsenic acid with a mixture of sulphuric and sulphureous acid, neutralized the fluid with ammonia, and submitted it to the same tests. The results of this mixture were analogous to the former. The decomposition of the arseniated hydrogen gas, is probably analogous to the decomposition of this gas, by means of oxygenized muriatic acid gas. The sulphuric acid first gives up part of its oxygen to the hydrogen of the arseniated gas, and occasions the separation of the arsenic; which, at the expence of the remaining portion of oxygen of the sulphuric acid, becomes afterwards oxygenized, and constitutes the arsenic acid.

Habitudes of arseniated Hydrogen Gas to Metallic Solutions.

I caused a current of arseniated hydrogen gas to pass through a solution of ammoniate of copper. A metallic pellicle appeared on the surface of the fluid, which suffered no other change.

Into a bottle filled with arseniated hydrogen gas, I dropped a solution of muriate of tin. On agitating the solution, it

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it acquired a brown colour, a partial diminution of the gas ensued, but the solution of tin was not converted into an oxydized muriate of tin, which would have been the case, if the arsenic existed in the gas in an oxydized state.

Nitrate of lead, on being brought into contact with arseniated hydrogen gas, became turbid, and deposited a precipitate, which was arseniate of lead.

Nitrate of silver submitted to the action of the gas, became instantly of an intense black, and a pellicle of metallic silver collected on the surface of the fluid. The residue of the gas, which had been made to act on the oxyde of silver for some time, had all the properties of pure hydrogen.

This experiment shows, that nitrate of silver might be employed for detecting the presence of arseniated hydrogen; for as long as a minute quantity of arsenic was present, a black precipitate ensued, whereas *pure* hydrogen has no effect upon this re-agent.

I passed into a concentrated solution of nitrate of silver, a stream of arseniated hydrogen, collected the black metallic precipitate, washed and dried it. The fluid obtained in this process did not disturb the transparency, or change the colour of ammoniate of copper. Neither liquid sulphurated hydrogen, tincture of galls, nor potash, had any effect upon it. It contained therefore neither silver nor arsenic. The precipitate before obtained, acquired a metallic lustre on being saturated; laid on ignited coals, it diffused an odour of arsenic, and it yielded by fusion a button of silver. It was an arseniate of silver.

Arseniated hydrogen passed into a solution of nitro-muriate of gold, occasioned a precipitate; on the surface of the fluid appeared a pellicle of metallic gold; and the sides of the vessel, in contact with the fluid, became beautifully gilded. The fluid through which the gas had been passed, examined in the usual manner, proved to contain no vestige either of gold or arsenic. The precipitate greatly resembled charcoal dust, interspersed with minute particles of gold.

It is highly probable, that arseniated hydrogen is capable of decomposing all metallic solutions, the basis of which is either nitric, or muriatic acid, and probably other acids.

Habitudes of arseniated Hydrogen Gas to various other Bodies.

Expressed oils, on being agitated for some time in contact with arseniated hydrogen, absorbed part of the gas, and acquired a deeper colour.

Alcohol

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Alcohol suffers no change from arseniated hydrogen. Solution of potash, and liquid ammonia, do not absorb it.

Such are the properties of this gas, the investigation of which I shall continue as soon as my health is restored, it being so considerably injured by the unavoidable inhalation of this gas during the course of these experiments, which gives me ample reason to conclude, that the gas must be highly poisonous.

Enfurth, Feb. 1803.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

MR. DUNNING, in his Observations on Vaccination, has given an account of an eruptive disease, to which poultry are subject in the East Indies. It is called gooty, which signifies the small-pox. This account was communicated to Mr. Dunning by Dr. Jenner.

Being informed by Capt. Money, that he had seen the disorder, I desired to know some particulars concerning it; and he favoured me with the following statement:

"When I was at Madras in 1794, I purchased twelve dozen of Pondicherry capons, with the intention of preserving them in Bengal for the homeward bound passage. They had not been long in Calcutta, before an eruptive disease made its appearance upon several, and, in the course of a month, extended to and annihilated the whole stock.

"The feathers on the back and breast of many dropped off; and the skin appeared perfectly red. Others died suddenly without loss of feathers; and all died without any diminution of flesh.

"Having related this remarkable instance of fatality, upon my return to the Coast, I was informed that it was not uncommon; that fowls were subject to a disease similar to the small-pox; and that, in some places, they were even inoculated, for the advantage of having it in a milder manner.

This account agrees in most respects with that received by Dr. Jenner from a gentleman who had resided many years at Bengal. That gentleman, however, stated, that inoculation was practised to lessen the evil, but in vain.

Dr. Ivory,

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Dr. Ivory, who resided at Bengal twelve years, informs me, that turkeys are subject to a similar disease; which is called by the same name as the small-pox, gooty; and by the Hindoos matah, which is pronounced mawtaw.

Major Magra was told it was the small-pox, and that it always proves fatal. He landed twelve turkies from Sicily, and they all died. It is impossible to breed them at Tunis, although fowls are very plenty there.

I am informed by Major Magra, who resided six years at Tunis, in the character of His Majesty's Agent, and Consul General, that the same disease prevails among turkies on the Coast of Barbary. Their heads swell, and are affected with pustulous eruptions, and they become blind. The disorder is supposed to be infectious.

I have not been able to learn that the chicken-pox of the human species originates in the fowl from which it derives its name. It is probably so denominated only from its resemblance to that affection.

A popular opinion prevails in some parts of England, that the measles originate in swine, and are communicated by the brute animal to the human species. This, we have reason to believe, is a vulgar error; but the history of vaccination proves that popular opinions deserve attention. It is a popular opinion, that the chicken-pox, and the swine-pox, as it is called, in the human species, are two distinct diseases; we have the most respectable medical authority to the contrary; but some cases which I have seen, and others which I have heard, convince me that the subject is worthy of further investigation.

The chicken-pox is sometimes called by another name. Mrs. Wait, No. 6, Husband Street, Carnaby Market, informs me, that when she lived at Berkhamstead, her children had a disorder called the blisters; and that it was contagious. Hence it is probable that it was the chicken-pox, under another denomination.

This disease, however mild, assumes a certain degree of importance, in consequence of the probability of its being mistaken for the small-pox. No error is more common, or more serious than this. I therefore consider it a duty, to point out every mark of discrimination between the two disorders. In addition to others which I have noticed in my treatise on the cow-pox, I shall here mention one, communicated to me by Mr. Hurlock, namely, that the small-pocks have at first a depression at the apex, which the chicken-pocks have not; and hence it is common to hear the expression, the pocks begin to fill.

I can-

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I cannot conclude, without recommending a little more attention to that "shadow of a disease," as it has been called, the chicken-pox; since there is no cause from which vaccination has suffered more, or more unjustly, than from this affection being mistaken for the small-pox.

I am, &c.

JOHN RING.

New Street, Hanover Square, April 12, 1804.

Extract of a Letter from the Rev. Dr. BOOKER, *of Dudley, to a Friend in Gloucestershire, on the Subject of the* COW-POCK.

EVERY instance of scepticism that I hear of, respecting the efficacy of Vaccine Inoculation, astonishes me nearly as much as if I heard a man deny that the sun is the source of light and heat in the visible creation. Thanks to a beneficent Providence and to Dr. Jenner, that most valuable discovery has triumphed over every species of incredulity throughout the very populous neighbourhood in which I live; where it was at first cautiously received, but is now universally adopted. In my own parish (containing about 14000 inhabitants) so salutary a blessing has it proved, that only ONE VICTIM, *within the last two years*, has been seized by the small-pox; a baneful pest, which, for ages prior to vaccine inoculation, glutted the grave in every region of the earth; but which now only rages and destroys where prejudice or infatuation patronizes and befriends it. Soon would it be no more if these did not now and then furnish it with prey. Were *they*, however, who are actuated by these principles, restricted to select victims from their own children, parental feeling, methinks, agonized by the sufferings and death of those who are *bone of their own bone and flesh of their own flesh*, would speedily cure them of prejudice, or correct their infatuation.

Previous to the introduction of Dr. Jenner's great discovery among my parishioners, I have frequently read the funeral service over seven or eight victims of the small-pox in a day. The single instance of mortality, by the same disorder above mentioned, happened fortunately, I think, for the public. It was deemed an anomaly, an occurrence strange and unnatural by the neighbourhood; and by the parents as an event which *their* prudence might have prevented. Their feelings were, therefore, very acutely affected;

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fected; no doubt severely charging themselves with being accessary to the death of the child, in not having shielded it from danger by vaccine inoculation.

May no other parent experience such painful reflections! And long may He live to enjoy his feelings, who has been the means, in the hands of Providence, of saving, and whose discovery, under the same Divine Power, will *continue* to save, thousands and tens of thousands of the human race!

March 14, 1804.

New Method of expelling the Tape Worm.

Dr. DE BECK, Physician to the Emperor of Russia, has adopted the following method for expelling the Tape Worm, particularly that species with short and broad joints, (Taenia lata) The patient is to take, about four or five o'clock in the evening, the following powder, mixed with water or watergruel: R. Mercur. dulc. scr. j. corn. cervi usti, cinnabaris antimonii aa. gr. x. M. f. pulv. At night, after having taken some broth for supper, two ounces of the oil of sweet almonds are to be given. The next morning he is to take, before breakfast, *one* powder of the following mixture, which the Doctor calls *specificum*, in a tablespoon full of syrupus persicorum, after which he is to drink a cup or two of tea. R. Radic filicis maris dr. j. jalappæ, gummi guttæ, hb. cardui bened. corn. cerv. ust. aa. dr. ß. M. f. pulv. subtiliss. divid. in iij. partes æquales, s. specificum.

This powder generally occasions, within two or three hours, vomition, which however is much alleviated by drinking weak tea or some broth. The excrements discharged at the same time ought to be carefully examined, in order to see whether the whole tape worm, or only pieces of it have been voided; in which latter case the patient is to take a second powder; and should the whole tape worm not be expelled two or three hours after, the last dose of the specificum is to be given, by which the expulsion of the worm will certainly be effected. If the tape worm be voided early on the same day that the patient has taken the specificum, it generally shows signs of life on being put into a bason with warm water; but should it go off the day after, it is found dead in the stool.

To

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To some patients the specificum neither causes vomition nor purging, though the worm is notwithstanding expelled. Sometimes the first dose of the specificum suffices for driving out the whole tape worm, but always succeeds with the second dose. In these cases the remedy occasions very little inconvenience to the patient, and he is generally able to walk about the following day and to attend to his usual occupations. But should the patient be obliged to take the last dose, the fasting and efforts of the stomach, the purging and the violent motions of the tape worm will produce debility and sickness of the stomach, which symptoms continue some time after, but are easily remedied. Young female patients, of a tender habit, have successfully gone through this cure, and often been well the following day, without having had recourse to any medical assistance.

Two hours after the expulsion of the tape worm, the patient is directed to eat something, and to take a glass of good wine; and also, if the worm should be voided, one hour after the last dose the patient may be allowed to take some food. The sickness of the stomach is soon removed by a cup or two of broth, or by a mixture of wine and water. As soon as the tape worm appears, care must be taken not to tear it off, for which purpose the piece hanging out may be wrapped in soft linen, or the patient ordered to sit on a flat vessel filled with four or five pints of luke warm milk, sweetened with sugar, into which agreeable liquor the worm will soon disentangle itself, particularly as the intestinal canal is impregnated with remedies highly disgusting to it. If the patient be weak and feels himself too much debilitated by the first dose of the specificum, the following doses may be diminished; and if the first does not sufficiently operate, one hour after he may be allowed to drink some broth. If the powder remains only one quarter of an hour in the stomach, its operation will certainly follow; but in case the remedy be immediately ejected, by the patient having an unsurmountable aversion to it, no operation is to be expected. Patients of a robust habit may take instead of the jalappa, hba. gratiolæ; and in case the tape worm does not go off the same morning, a clyster of bitter herbs saturated with Epsom salt may be administered. Should this however not sufficiently operate, the patient is to take the following powder in the space of three hours.—℞. Pulv. rad. jalapp. dr. j. hb. gratiolæ, scr. j. M. f. dos. jjj. D.

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I AM sorry indisposition prevented me from replying to Mr. Ward's statement in your January Number, in the succeeding month. Intentional misrepresentation nothing can justify; being unconscious of the slightest design of this kind throughout all I have written on the subject of opium, I certainly deem no further apology necessary. I have, from Mr. Ward's first promulgating his thoughts on the matter (viz. in 1799) thought, and still continue to think, that there was a time when he deemed opium a tonic stimulant. It appeared evident to me from his early reasoning, and from his mode of practice. And is there any thing blameworthy that he, or any practitioner, should, from good premises, change their opinion? Do we any of us hold exactly the same opinion of every medicine in 1804 as we did in 1784? The full passage on which Mr. W. lays so much stress, as misquoted and injuriously misrepresented, runs thus: Vol. 6, p. 480—"Various cases have been recorded where it was thus introduced (opium by friction), and was found to exert its salutary virtues, so as to produce the most beneficial consequences (and, without occasioning those inconveniences which often arise from its internal use, especially in large doses), after the same medicine both alone and joined with OTHER antispasmodics, tonics, &c." Now I confess my stupidity in still being unable to view this passage in any other light than as a classification of opium with antispasmodics and tonics. Your Readers will judge for themselves; but to put the matter out of doubt, in my humble apprehension, nothing more is requisite than to give a short quotation from the P.S. to your 50th No. where Mr. W. says—"and that my choice was not at all directed by any opinion I had formed of the modus operandi of opium (for I confess I had not then paid sufficient attention to the subject to enable me to make up my mind upon it)." Thus Mr. W. acknowledges all for which I contend, after having held the subject before the public near five years. I can truly say, "Odi omnes in scribendo acerbitates." I never was ambitious of the particular notice of Mr. W.; I wrote what your indulgence has already inserted in my desultory manner for the public, well knowing its candour, and that medical novices particularly have never failed to meet that candour when their

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their designs have clearly appeared to be the public good. Mr. W. long since claimed a right to be heard out, and then to be answered. In compliance with this claim, the Editors of the Journal suppressed the paper I sent them in April, 1803, till December. In November the public was favoured with Mr. W's case of cancer (still unconcluded) preliminary to the recital of which he expresses disappointment at his proposed definitions not being noticed, amended, or his opponent's sentiments given on so interesting a topic; and all this after requesting their silence until he could say, "and this is the conclusion of the whole matter." On perusing the paper upon cancer, I wrote a short one, containing some thoughts thereon, so far as opium was concerned, and on what I had before advanced respecting Mr. W's unsettled opinion, which, if you will indulge me by inserting now, will convince Mr. W. I had not been inattentive to his request in No. 50. I should instantly have cleared up this matter in April, had I not concluded my paper of that date would have been sufficient. I have already said I hate controversy; I have no ambition of this sort, but I will yield to no man, not even Mr. W. in my ambition to do good, in my endeavours to produce something practically useful to mankind. Should I ever gain this proud laurel of the medical man, my desultoriness will be pardoned, though I must add, it ill becomes an author to comment on such a fault, who has already taken nearly five years to explain his theory, and written near an hundred pages on the subject; and after all this, has not been willing, with all his time and talent, to attempt a refutation of one practical fact out of numbers adduced to disprove the hypothesis he has given to the public.

Chester, March 8, 1804.

I am, &c.

G. N. HILL.

REMARKS ON THE LAC SULPHURIS, *by* Dr. PIEPENBRING, *of Cassell.*

THE preparation of sulphur, known under the name of lac sulphuris, or sulphur præcipitatum, has been considered in almost all modern pharmacopœias and works on materia medica, as not being different in quality from pure sulphur; to which it is said to be only preferred in unguents

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guents on accont of its white colour. According to my observations, however, there seems to be a material difference in the chemical nature, as well as in the mode of operating on the living body, between this preparation and pure sulphur. Its extremely white colour seems to indicate, that by the previous solution and precipitation of sulphur something is either added to it or it has been deprived by that process of a certain substance. If the opinion of M. Van Mons be well grounded, who considers sulphur as an oxydated substance, we might be led to think, that the colour of lac sulphuris originates in a loss of oxygen; but this idea being not sufficiently confirmed, it seems rather probable, that it has received something to which the white colour is to be ascribed; I therefore adopt the following process in preparing precipitated sulphur. At the moment the sulphurated kali is infused with water, and the solution preparing to be made, part of the water is decomposed, and the oxygen, which is thus disengaged, adheres to a part of the sulphur, forming with it oxydated sulphur, while the hydrogen of the water combines itself with another part of the sulphur, thus forming sulphurated hydrogen; the whole mixture is in this manner changed to hydrogenated sulphurated kali, which consists of kali, oxydated sulphur, sulphurated hydrogen, and water; the caloric of the decomposed water being received by the sulphurated hydrogen, forms sulphurated hydrogen gas. On adding to this mixture any acid, viz. sulphuric acid, it is united with the kali, while the oxydated sulphur is separated, falling to the bottom in form of a white powder. The proximate constituents of this preparation are consequently oxydated sulphur, oxydated sulphurated hydrogen; and the remote constituents, sulphur, oxygen, and hydrogen. But whatever its chemical nature may be, it certainly seems to operate in a different manner on the animal economy; its action is quicker and more efficacious than that of pure sulphur; it is more easily digested in the stomach, and being less heating than common sulphur, it may be given in larger doses; it particularly promotes the alvine excretion, and being less disagreeable than sulphur, it may be continued for a longer time.

The best method of preparing lac sulphuris is the following. Take of pulverised sulphur two pounds, mix it with four pounds of pulverized pure kali, until they unite into an uniform powder. After being thoroughly dried, put it into an iron vessel, which has been previously heated on a coal fire. The vessel must be well shut. As soon

as

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as the mass begins to melt, stir it occasionally with an iron spatula till a portion of it, when taken out, is soluble in hot water, which is a sure criterion of the process being finished. Take the vessel from the fire and let it cool; then pour eight pounds of water into it, stirring the mixture till the whole be dissolved; and when it is cold, pour it into a glass vessel and add two more pounds of water. In this vessel it must stand for two or three days, till it has obtained a yellowish colour. The solution of hydrogenated sulphurated kali is poured into another vessel, and the remaining sediment put on a piece of thick white linen, which has been previously moistened, and about 4 pounds of water gradually run over it. Meanwhile, mix 6 pounds of water with 2 pounds of white concentrated sulphuric acid, and let the mixture cool. Having added the water which runs over the sediment to the rest of the solution, gradually infuse into the whole mixture small portions of the diluted sulphuric acid, which must be continued as long as any effervescence is perceived. When the sulphur is in this manner precipitated, the liquor is suffered to run off and the residuum is properly edulcorated. The quantity obtained from the whole mass will be about 18 ounces; it will appear of a beautiful white colour.

Catalogue of such British Plants as have been found in any Shape serviceable to Man, whether in a medicinal, œconomical, culinary, or agricultural Point of View, together with an Account of the Uses which they have been made to answer, and an accurate Botanical Description of each Plant.

(Continued from our last, pp. 368—372.)

5. PINGUICULA. *P. vulgaris. P. Gesneri.*

Ang. Butterwort. Yorkshire sanicle.

Gen. Desc. Blos. gaping, ending in a spur. *Cal.* two-lipped, five-cleft. *Caps.* one cell.

Spec. Desc. Nectary cylindrical, as long as the petal. *Leaves* covered with soft prickles, secreting a glutinous liquor. *Blossom* violet, purple and reddish, and an ash-coloured woolly shot on the palate. *On bogs.* May.

Use. The juice of the leaves kills lice; and the common people use it to cure cracks or chaps in cows udders. It is made much use of by the inhabitants in the north of Sweden; the fresh gathered leaves are put into a filter or

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strainer, through which is poured milk warm from the rein deer, and the milk being sat by for a day or two, to become acescent, it acquires consistence and tenacity; the whey does not separate, nor does the cream, and in this state it is an extremely grateful article of food. Half a spoonful of this prepared milk, mixed with fresh warm milk, converts the latter into its own nature; and this again will have the same effect, and so on, without having recourse a second time to the leaves—*Linn.* It did not succeed with cow's milk—*Mr. Hawkes.* This plant is generally supposed to be injurious to sheep, and is imagined to occasion a disease which farmers call the rot. But it may be a question, whether the rot in sheep be so much owing to the vegetables in marshy grounds, as to a flat insect, called a fluke *(fasciola hepatica)* which is found in these wet situations adhering to the stones and plants, and likewise in the livers and biliary ducts of sheep afflicted with the rot. From experiments made on purpose, and conducted with accuracy, it appears, that neither *sheep*, cows, horses, goats, nor swine will eat this plant—*Withering.*

6. Lycopus. *L. Europæus. L. palustris, pseudo marrubium palustre.*

Ang. Water hore-hound, hore-hound gypsey-wort.

Gen. Desc. Bloss. four-cleft; one segment notched at the end; *stamens* distant; *seeds* four, blunt.

Spec. Desc. Leaves indented, serrated; a little hairy. *Stem* with four corners and four hollow sides, hairyish. *Blossom* whitish with a tinge of purple, hairyish within, upper segment slightly notched, lower one with purplish spots at the inside; between the stamens frequently two or three shorter filaments, generally without anthers. *Germen* on a yellow glandular receptacle. *Flowers* several together, in the bosoms of the upper leaves. *Branches* opposite, rising from the bosom of the leaves. *In sandy ground on the banks of streams and ponds. Bloss.* July, Sept.

Use. It dyes black, and has been used with linen and clothes. The juice gives a permanent colour to linen, wool, and silk, which will not wash out. Travelling gypsies use it to stain their faces. Sheep and goats eat it; cows and horses refuse it

7. Orchis. *O. mascula, satyrion in Pharm. Ed. Cynosorchis moriomas.*

Ang. Early orchis, male fool-stones.

Gen. Desc. Bloss. gaping; nectary like a horn behind the flower.

Spec.

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Spec. Desc. Lip of the nectary four-lobed, finely scolloped, dotted at the base; horn blunt; upper petals turned back. Bulbs oval, entire, fixed to the base of the stem. *Leaves* spear shaped, bright green, and shining above, sea-green underneath, with longitudinal parallel veins, usually with dark brown spots: Floral leaves longer than the germen. *Flowers* purple, rarely white, numerous, the outer petals bent back, not at all approaching the helmet, rather pointed; the middle one expanding and lying over the two lower ones, which approach closely and are of a paler colour. *Stem,* twelve to fifteen inches high. *In meadows and pastures.* Bloss. May.

Use. This plant has a place in the materia medica of the Edinburgh Pharmacopœia, on account of the root, which abounds with glutinous slimy juice of a sweetish taste: To the smell, faint and somewhat unpleasant. This mucilaginous quality of the root has recommended it as a *demulcent,* and it has been generally employed with the same intentions and in the same complaints as the root of althæa and gum arabic—*Woodville.* Of the root of this species of orchis it is now known that salep is made, which has been hitherto imported from Turkey, and from the East, at a considerable expence. Dr. Percival has published, on the authority of Mr. Moult, of Rochdale, the best method of curing the orchis root; and recommends the process from his own knowledge of its success, adding that he had seen many specimens of salep thus prepared, equal, if not superior, to any imported from the Levant. The root should be gathered when the seed is formed, and the stalk is about to fall, for then the new bulb, of which the salep is made, is arrived at its full size, and may be distinguished from the old one by a white bud rising on the top of it. The new root is to be washed in water, and the fine brown outer skin taken off by means of a small brush, or by dipping in hot water and rubbing it with a coarse linen cloth. The roots thus cleaned are to be spread on a tin plate, and placed in an oven heated to the degree of a bread oven, where, in six or ten minutes, they will have acquired a transparency like horn, without any diminution of bulk. In this state they are to be removed to harden and dry in the air, which will require some days to effect; or by a very gentle heat they may be finished in a few hours—*Percival.* As an article of diet, salep is accounted extremely nutritious, and has been thought fit to constitute a part of the provisions of every ship's company, to prevent famine at sea. An ounce of this article, together with the same

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same quantity of portable soup *(the dried gelatinous part of flesh)*, in two quarts of boiling water, will afford a man sufficient subsistence for a day—*Woodville.* Several authors have recommended the use of salep in *diarrhœa, dysentery, dysury,* and *calculous* complaints; but in the symptomatic fever, which arises from the absorption of pus, from ulcers in the lungs, from wounds, or from amputations, salep is an admirable demulcent, and well adapted to resist that dissolution of the crasis of the blood, which is so evident in these cases—*Percival.* Salep, prepared as above, may be sold for less than a shilling a pound; and it is to be hoped we shall no longer be supplied, at a high price, from foreign markets, with an article that our own country can supply in almost any quantity.

Mr. Mault made his experiments on the roots of the *O. Mascula* only; but those of the *O. Morio* are equally proper for the purpose, and it is probable that every species of the plant may be used indiscriminately—*Withering.* It must be propagated by the roots, for the seeds seldom come to perfection. These roots have been noticed ever since the time of Dioscorides for their supposed aphrodisiac qualities.

8. SALIX. S. triandra.

Ang. Smooth willow.

Gen. Desc. Catkin, each scale containing one flower. Bloss. none. *Male,* a nectariferous gland at the bottom of the flower.

Female. Style cloven; caps. one cell; two valves; seeds downy.

Spec Desc. Leaves oblong, spear-shaped, tapering; the lower ones dark green, paler underneath, serrated, one to three inches long, on leaf stalks. *Flowers* with three stamens, sometimes two. Male catkins conical, changing to cylindrical, upright, one to one and a half inch long; fruit stalks half an inch long; nectaries 2. Fem. catkin slender, upright; fruit stalks one inch long. *Stem* six feet high and more, smooth, yellowish green, branching; upper branches shortest, often spotted with red. The female plant is rare. *Woods, hedges, or banks of rivers.* BLOSS. April.

Use. The bark, in doses of one or two drachms, has been found efficacious in curing the ague, as a substitute for Peruvian bark.

9. SALIX. *S. pentandra. S. hermaphroditica.*

Ang. Sweet willow. Bay leaved willow.

Gen. Desc. As above,

Spec.

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Spec. Desc. Leaves egg shaped, acute, yellowish green, pour out at the edges a yellow gum from each tooth; glossy; in hot weather exhale an odoriferous perfume; eleven on barren, six or eight on fertile shoots. *Flowers* with five stamens. Catkins very yellow, sweet scented. *Nectaries* three, sometimes wanting at the extremity of the catkin, and supported by three perfect stamens. Stem six, ten, or twelve feet high; branches yellowish purple. *Woods and Hedges.* Bloss. April.

Use. The bark is an astringent, and has been used as a substitute for Peruvian bark. The leaves dried afford a good yellow dye. The branches are cut to make springles: it is much used in Yorkshire for the largest baskets. Sheep and goats eat it. The wood crackles in the fire.

10. Salix. *S. fragilis. S. folio longo latoque splendente.*
Ang. Crack willow.
Gen. Desc. As above.
Spec. Desc. Leaves egg-spear-shaped; leaf-stalks toothed with glands. A tall tree. Bark wrinkled, grey. The branches, struck with the finger, break off at the shoot of the present year. *Woods, hedges, river-banks.* Bloss. April, May.
Use. The bark is astringent and bitter; hence it has been thought a good substitute for Peruvian bark, and has been found to stop the paroxysms of *intermittents;* it is likewise recommended in other cases requiring *tonic* or astringent remedies, and has been admitted into the Edinburgh Materia Medica. The bark of some other species of salix possess similar qualities, but that of S. triandria is the most effectual of any of this genus.—*Woodville.* The bark, in doses of one or two drachms, will cure agues.—*Med. Com.* It thrives in any soil if sufficiently moist, grows quick, and bears cropping.

11. Salix. *S. alba.*
Ang. Common willow. White willow.
Gen. Desc. As above.
Spec. Desc. Leaves spear shaped, tapering to a point, sharply and elegantly serrated, shining but pubescent above, white and silky underneath.
M. catkins cylindrical, blunt, one inch and a half to two inches long, on fruit stalks half an inch long.
F. cat. slender, two inches long, fruit stalk one inch, stamens two, nectaries two. A tall straight tree this, with the s. fragilis, being the largest trees of the kind; the bark grey, cracked; branches numerous, upright, expanding,

grey,

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grey, or brown green. Inner bark green. ***Woods, hedges, and wet pastures.*** Bloss. April.

Use. An account of the efficacy of the bark of this tree in curing intermitting fevers, has been given by the Rev. Mr. Stone. He gathers the bark in summer, when full of sap, dries it by a gentle heat, and gives a drachm powdered, every four hours between the fits. In a few obstinate cases he mixed one-fifth of Peruvian bark, *Phil. Trans. liii, p.* 195. It is remarkable that in wet situations, where intermittents are most prevalent, this tree grows naturally. From the present high price of Peruvian bark, and the scanty supply of that article from S. America, hardly equal to the consumption, the *white* WILLOW bark is likely to become an object worth the attention of physicians, if its success upon a more enlarged scale becomes equal to Mr. S's experiments, to whom the world will be much indebted for the communication. The bark of other species having the same properties, it would be useful to ascertain by experiment, which should be preferred. This bark will tan leather. Horses, cows, sheep, and goats eat the leaves and the young shoots. Bees are very fond of the flowers.—*Withering.*

The bark will dye yarn of a cinnamon colour; and is of so *astringent* a quality that one scruple has been of much service in intermittents. A decoction of it, used as a bath, is affirmed by Haller, from his own experience, to have been very beneficial to ricketty children. The inner bark is used in Kamschatka as a miserable substitute for bread. From the catkins of every species of salix, which has fragrant catkins, the Arabs distil their celebrated caluf water, which they use as a cooling liquor or as a febrifuge.—*Lightfoot.*

12. Fraxinus. *F. excelsior.*

Ang. Common ash tree.

Gen. Desc. Calyx none, or with four divisions. Blossom none, or with four petals. Female and hermaphrodite flowers. Pist. one, caps. two-celled, leaf-like upwards, compressed; one cell barren. Seed spear-shaped.

Spec. Desc. Leaf is serrated; flowers without petals. *Leaves* opposite, on leaf stalks; (sometimes simple) *leaflts* sitting, four or five pair with an odd one. Some trees produce only male flowers, some only female, and some hermaphrodite. *In woods and hedge-rows.* Bloss. March to May.

Use. The bark and seeds are reckoned diuretic.—*Lightfoot.* An infusion of the leaves, from half an ounce to an ounce

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ounce and a half is a very good *purge;* and a decoction of two drachms of the *bark*, or of six drachms of the *leaves*, has been used to cure agues. The seeds are acrid and bitter. The *bark* is used for tanning calf-skin. A slight infusion of it, viewed between the eye and the light, appears of a pale yellowish colour, but if looked down on, or placed between the eye and an opake object, it is blue. Acids destroy this blue colour, and alkalis recover it again. The *ashes of the wood* afford very good potash. The wood has the singular advantage of being nearly as good when young as when old. It is hard and tough, and much used for tools in husbandry. The roots run near the surface, and extend themselves to a great distance, whence it is destructive to the herbage in upland pastures, but on the margins of ditches or low meadows, the roots act as under-drains, and render the ground hard and firm; but in this case the wood is of little value. It will give a good, though not a beautiful green to cloths that have been blued. In the North of Lancashire the tops of this tree are used in Autumn, when the grass is on the decline, for the food of cattle, which peel off the bark to eat. In very dry summers the leaves are used to feed cows sometimes in Staffordshire. Horses, cows, sheep, and goats eat it, but it spoils the milk of cows, and should not be planted in dairy farms.—*Withering.* In Queen Elizabeth's time, the inhabitants of Colton and Hawksheadfells, remonstrated against the number of forges in the country, because they consumed all the loppings and croppings, the *sole winter food* for cattle.—*Pennant.* From this tree in warm climates exudes the sweet gum, sold as a gentle *cathartic* by the name of manna, though not so abundantly as from the F. ornus.—*Lightfoot.* In the church-yard of Lochaber, Dr. Walker measured the trunk of a dead ash, which, at five feet from the ground, was fifty-eight feet in girth.

Class III. Triandria.

Triandria, Monogynia.

1. Valeriana. *V. officinalis. V. sylvestris. V. Sylvestris major.*

Ang. Valerian, great wild valerian.

Gen. Desc. Calyx none. Bloss. 1 petal, superior, gibbous at the base on one side. Seed 1, or else a three-celled capsule.

Spec. Desc. Leaves winged and toothed. *Blossom*, pink. Upper floral leaves spear-shaped. *Hedges, woods, marshes, commons.* Bloss. June.

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Use. It is a *variety* of this species with narrower leaves, which has so great repute as a medicine; it does not exceed two feet in height, and loves dry heaths and pastures. The root has a strong, disagreeble smell, and a warm, bitter, sub acrid taste, both which it communicates to wine, water, or spirit. It possesses *antispasmodic* virtues in an eminent degree.—*Withering.* Its efficacy in *epilepsy* is proved by many instances recorded by a variety of writers; and it has been found highly serviceable in other complaints, termed nervous, particularly those produced by increased mobility or irritability of the nervous system. Bergius states its virtues to be *antispasmodic, diaphoretic, emmenagogue, diuretic, anthelmintic.* Dr. Cullen attests its antispasmodic powers. The root, in substance, is most effectual, and is usually given in powder from a scruple to a drachm.—*Woodville.* It may be taken from half a drachm to two drachms for a dose.—*Withering.* In habitual costiveness it is an excellent medicine, and frequently loosens the bowels when stronger purgatives have failed. Cats are delighted with the smell of the roots, and rats also, insomuch that rat-catchers employ them to draw rats together.—*Withering.* Cows eat the leaves, sheep refuse them.

2. VALERIANA. *V. locusta.*

Ang. Lamb's lettuce. Corn sallad. Lettuce valerian.

Gen. Desc. As above.

Spec. Desc. Stem forked. *Leaves* strap-shaped, entire, (in some varieties serrated, or jagged) fringed with white hairs as well as the stem. *Blossom* bluish white. *Common in corn-fields.* BLOSS. April and July.

Use. The young leaves in spring and autumn are eaten as sallad, and are very little inferior to young lettuce. Cattle eat it.

3. BRYONIA. *B. dioica. B. alba. B. aspera. B. alba vulgaris.*

Ang. Bryony, red-berried bryony, wild vine.

Gen. Desc. Calyx five-toothed; bloss. five divisions; male anthers united at the base. Female, style three-cleft; berry roundish, mostly one-seeded.

Spec. Desc. Leaves imperfectly hand-shaped, rough on both sides, with callous points. Male and female flowers on different plants. Barren and fertile plants rarely grow near together. *Blossom* yellow with greenish streaks. *Berry* red. *Seeds* three to six. *Hedges and thickets.* BLOSS. May.

Use. Both the root and its juice, (which, in spring, if the top

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top of the root be bared of earth and cut transversely over, is thrown up in abundance for two or three days,—*Lewis*) have a disagreable smell, and a nauseous, bitter, biting taste, and if applied to the skin they inflame or even vesicate the part. Bergius states this root to be *purgans, hydragoga, emmenagoga, diuretica,* and recommends it in *dropsy* and *asthma*. This powerful and irritating cathartic, now seldom prescribed, is said to be of great efficacy in evacuating serous humours, and has been chiefly employed in hydropical disorders, (two drachms have been given in dropsy with success,—*Lightfoot*). Instances are mentioned of its good effects also in asthma, mania, and epilepsy. In small doses it is said to act as a diuretic and to be resolvent and deobstruent; in powder, from a scruple to a drachm, it is strongly purgative; the juice has a similar effect but more gently. An extract, prepared by water, acts more mildly and with greater safety than the root in substance, and given from half a drachm to one drachm infused in wine, half an ounce is a full dose.—*Withering*. Externally the fresh root has been employed in cataplasms as a resolvent and discutient, also in ischiatic and other rheumatic affections.—*Woodville*. A cold infusion of the root in water is used externally in sciatic pains; a cataplasm of it is a most powerful discutient. A decoction made with one pound of the fresh root is the *best purge for horned cattle*. The active virtues of this plant seem to claim more attention than is now bestowed on it.—*Withering*. Goats eat it. Horses, cows, sheep, and swine refuse it.—*Linn*.

4. Crocus. *C. sativus. C. officinalis. C. officinalis autumnalis.*

Ang. Saffron, common, or autumnal saffron.

Gen. Desc. Bloss. six equal divisions, summits coiled.

Spec. Desc. Sheath one valve rising from the root; tube of the blossom very long. *Blossom* purplish blue; filaments purple; summits deep orange, germen cylindrical. *Cambridgeshire, Essex, and near Derby.* Bloss. August, and September.

Var. C. vernus, or C. officinalis sylvestris, spring saffron, or crocus, leaves broader, flat edges. Blossom both yellow and blue. Bloss. March.

Use. The summits of the pistils of the *crocus offic.* is the saffron of the shops, carefully collected and moderately dried, in the following manner. In autumn the flowers are gathered in the morning, and the summits with a portion of the style are picked off, and dried by means of a sort of portable kiln, of a peculiar construction, over which

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which is spread a hair-cloth; this is covered with white paper, on which the summits are placed, two or three inches thick, then covered again with several sheets of paper, over which is laid a blanket, five or six times folded, or a canvas bag filled with straw; on this, when the kiln is heated, a board with a weight on it, is placed, to press the saffron into a cake. For the first hour a pretty strong fire is employed; the saffron is then formed into a cake, which being turned is subjected to the same heat for another hour; it is then turned again; and for twenty-four hours, or till it becomes dry, a gentle heat is applied, turning it every half hour. English saffron is preferred to any imported, and is distinguished by its parts being larger and broader. It affords a beautiful colour to water, wine, or spirit, and gives out the whole of its virtues, and three-fourths of its substance to them. Schroder asserts, that in the quantity of two or three drachms it proves fatal, and it has been said to produce intoxication and madness; it is said to penetrate every part of the body, tinging with yellow the solids and excretions, and to have, even by its odour or effluvia, produced deleterious effects; it has been considered as a most exhilarating cordial, and has been supposed to have much efficacy as an *emmenagogue*, as a *diaphoretic*, and as an *antiseptic*; but modern practice pays no great attention to it, since it has been found to produce no sensible effect, even in very large doses.—*Woodville, Withering, Cullen, &c.* It was held in high estimation by the Hebrews, who called it Carcom; and by the Arabians, by whom it was named Zaffaran. It has a powerful penetrating smell, and a warm, pungent, bitter taste.

5. Iris. *I. pseudacorus, I. palustris, Acorus adulterinus, A. palustris.*

Ang. Water flag, yellow flag, flower de luce, yellow water flower de luce, Sedge.

Gen. Desc. Bloss. six div. alternate segment bent back as if jointed. Summits petal-like, two-lipped, edges at the base turned in.

Spec. Desc. Alternate segment of the blossom smaller than the summit. *Blossom* yellow. *Petals*, the three outer toothed on each side, and streaked with purple. *Germen*, edges furrowed; summits cut into fringed segments at the top. *Valves* of calyx spear-shaped. Flowers three together at the top of the stem; two outer flowers, with each one sheathing valve, the middle flower two. This flower has the appearance of nine petals. *River-banks, marshes, wet meadows.* Bloss. July.

Use.

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Use. The root has an acrid styptic taste, and its juice snuffed up the nostrils, produces a burning in the nose and mouth, with a copious discharge from these organs; hence it is recommended as an *errhine* and *sialagogue.* The root well dried is a powerful *astringent,* and has been successfully used in the cure of diarrhœas; but the fresh root and its juice are strongly *cathartic,* insomuch that 80 drops of the latter given every hour or two *(by Dr. Rutherford, Ed. Med. Ess. vol. v. p. 94,)* produced repeated evacuations after the most powerful purgatives had failed, and by its continued use in increased doses, cured a violent dropsy.—*Woodville.* But the degree of its acrimony is so uncertain that it can hardly ever come into general use; the juice expressed from the old roots is the most active. In some cases it is *diuretic.* The fresh roots have been mixed with the food of swine bitten by a mad dog, and they escaped the disease, when others bitten by the same dog, died raving mad.—*Withering.* The root dried has been used instead of galls in making ink, and also in dying black. For the latter purpose it is employed in the island of Jura.—*Pennant.* In Mull and other parts of the Highlands, the root of this plant is used to cure the tooth-ach, or any inflammation of the throat; a piece about the size of a nutmeg is bruised in a mortar with a handful of daisies; the juice is strained through linen, and a tea-spoonful of it poured into each nostril. It is immediately followed by a kind of salivation which often effects a cure, but not without great danger of cold.—*Lightfoot.* The expressed juice is said to be an useful application to serpiginous eruptions and scrophulous tumors.—*Murray Ap. Med. vol. v. p. 277.* Goats eat the fresh leaves; cows, horses, and swine refuse them; cows will eat them when dry. The juice of this root as well as of the *Iris fœtida, stinking flag, or stinking gladwyn,* have been used to excite sneezing, but it is a dangerous practice, and sometimes produces violent convulsions.

6. Scirpus. *S. lacustris.*

Ang. Bull rush, club grass.

Gen. Desc. Husks chaff-like, tiled on every side; bloss 0, seed one; three-cornered, woolly.

Spec. Desc. Straw cylindrical, naked; spikes several, egg-shaped, on fruit stalks, terminating; calyx fringed three-cleft. *Rivers, pools, fens.* Bloss. July, August.

Use. When fodder is exhausted, cattle will live upon it. Cottages are thatched, and pack saddles stuffed with it. Chair-bottoms are also made of it; cut at one year old it makes the fine bottoms; at two the coarser; and at a

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greater age, mixed with the leaves of Iris pseudacoras, the coarsest bottoms. Mats are also made of it, either alone or thus mixed. Goats and swine eat it. Cows and sheep refuse it.

7. Scirpus. *S. maritimus.*

Ang. Salt marsh club grass.

Gen. Desc. As above.

Spec. Desc. Straw three-cornered; panicle close, leafy; scales of the spickets three-cleft, middle segment awl-shaped. *Leaves* stiff, sharp at the edges. *Panicle* sometimes branched, sometimes simple. *Spikes* oblong, rusty iron coloured. *Seeds* the same colour, egg shaped, compressed, tapering. *Sea-coast.* Bloss. August.

Use. The roots dried and ground to powder have been used as a substitute for flour in times of scarcity. Cows eat it.

8. Cyperus. *C. longus, C. odoratus radice longâ.*

Ang. Sweet cyperus, English galingale, long cyperus.

Gen. Desc. Husks chaff like; tiled in two rows. Bloss. 0. Seed 1, naked.

Spec. Desc. Straw three cornered, leafy; *Umbel* leafy more than doubly compound. *Fruitstalks* naked, sometimes twelve or thirteen, forming a sort of umbel. *Spikes* alternate; *little spikes* slender, chesnut coloured. Bloss. May.

Use. The root is agreeably aromatic to the smell; warm and bitter to the taste. In modern practice it is disregarded; but perhaps it is not inferior to some of the most costly medicines brought from abroad.—*Withering.* The roots are carminative and attenuant; they promote the menses, and are useful in chronic cases arising from obstructions of the viscera.—*Hill.*

[To be continued.]

To the Editors of the Medical and Physical Journal.

Gentlemen,

I Herein send you a drawing of a very curious insect, an account of which, I shall be glad if you can admit into the next number of your useful Miscellany. As it may possibly draw forth the observations and opinions of some of your Correspondents, I shall not commit myself by giving

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ing any opinion of my own; but only state such circumstances as I could collect from a narrow investigation of the subject.

On the 27th ult. Nurse L. of this town, took an emetic of her own accord, to relieve her of a giddiness. The emetic occasioned considerable efforts to vomit, without bringing any thing up but the warm water which she drank during its operation. At length, from straining, the left eye and nostril suddenly swelled; and about a tea-spoon full or two of blood flowed from the nostril, followed by the insect, which fell upon the hearth, besmeared with blood. It was alive, but soon died. Both Nurse L. herself and a neighbour who stood by, *believe* the insect came from the nostril; though they cannot undertake positively to say, whether it might not come from the stomach in vomiting. However they would not hesitate to make oath, that it came either from the mouth or the nose.

That your readers may form their own judgment of the matter, it is necessary to state, that Nurse L. has been subject for about seven years to sudden vertigos, with a considerable pain at times across the top of the nose, which were succeeded by a fit of epilepsy, one of which she had on the day she took the emetic. About six years ago, when attacked in this way with vertigo, she hung herself, and was taken down apparently dead. I attended her at that time, and restored her by the usual means. Within these few days, I have questioned her as to the cause of her commiting that rash act; and she declares that she can give no other reason, than that she "*did not know what she was about.*" She was constantly picking the left nostril, but it does not appear that she had ever any *particular* disposition to sneeze. It must also be remarked, that she frequently complained of a pain in her stomach, and is a woman much given to intoxication, to which cause her giddiness and fits have been commonly attributed.

The person who took a drawing of the insect, viewed it in a vial of spirits of wine, in consequence of which the figure here sent is somewhat magnified. The insect itself is not quite an inch in length and rather less in circumference than the figure appears. The colour is a light straw, its length is divided by twelve rings of a darker shade, and at irregular distances.

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I refer

I refer your readers to Vol. 6. of the Edinburgh Medical Essays, for an account of two centipeds discharged from the nose, one of which is said to have been in the *frontal sinus;* but we are not informed how that fact was ascertained. I am, &c.

Kidderminster, March 8, 1804. GEO. CUSTANCE.

P.S. This insect, when viewed through a microscope, is found to be very hairy about the head and tail, and its feet to have each a black *claw*.

EXPLANATION OF THE DRAWING.

A. The head. B. Six feet. C. Two short antennæ.
D. Uncated projection from the tail.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

A Case occurred lately in this city of a female child so young as five years being infected with the venereal disease; it had it in the form of buboes and chancre, and it had also gonorrhœa.

The child was treated in the usual manner for all these complaints; the buboes did not suppurate, and seemed frequently to be inflamed by the irritation of the discharge from the vagina, but when the discharge at last entirely ceased, the remaining swellings were removed by mercury rubbed on the skin in the course of the lymphatics; it was used to the extent of two ounces of the ung. hyd. fort.

Besides all these appearances, there was the most positive proof of a person, who lived in the house with the child, having inveigled it to his bed, of his having at different times endeavoured to perforate the vagina, and also of his having had the disease in question on him at the time he did it. All these circumstances were fully and clearly stated before a very respectable jury, and the person so accused accordingly found guilty.

But what will be thought extraordinary is, that a medical practitioner, who knew all that I have here related, came forward on the trial in behalf of the prisoner, and gave it as his opinion, that the buboes were scrophulous, and that females of *all* ages were subject to fluor albus.

The chancre was not insisted upon by the evidence for the

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the plaintiff, as mercury had been used before he saw it, and of course the appearance altered; but to a *medical* court it could positively have been proved by the treatment and *other* appearances.

As no other practitioner would corroborate this evidence (several of great respectability having seen it and given what I have related as their opinions) he introduced Dr. Underwood's publication on the Diseases of Children, in support of what he asserted; notwithstanding which, the circumstances were so strong and so well proved, that (as I have said before) the person accused was found guilty.

But as there is a possibility of the book being again produced on such an occasion, I think it proper that the opinion there given should be either *confirmed* or *confuted*. I will therefore quote the passage which relates to the present subject, *verbatim et literatim*, and will then venture to make a few observations on it.

"*Discharges from the Vagina.*

"These are either sanguineous, mucous, or purulent; as I speak professedly only of appearances before the age of puberty, I have merely to remark on the first, that female infants have sometimes such a discharge from the vagina a few days after birth, which appears to be of no consequence.

"Should it however on any account be thought necessary to prescribe *something*, a little testaceous powder, or magnesia, according to the state of the bowels, will be sufficiently astringent, as the discharge always disappears in a few days.

"Children of five or six years old are subject to a mucous discharge resembling the *fluor albus* of adults, which will in some instances be in an excessive quantity, so as to run through all their clothes, and is sometimes, though rarely, tinged with blood; if it were suffered to continue it would *probably* injure the health, but I believe may always be cured by one or other of the means recommended for the next, which may be called *purulent gonorrhœa*.

"This (I suppose he means purulent gonorrhœa) is no uncommon complaint in children of three or four years old, and is then, in general, easily removed by a little cooling physic, and keeping the parts perfectly clean. I have sometimes made use of a lotion of the compound water of acetated litharge, which I believe is preferable to most others, if had recourse to in the commencement of the complaint; and if there be any excoriations, they

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should be covered with the ung. cerussæ acetatæ, spread upon lint.

"When the purulent discharge makes its appearance later, which it will do at eight, ten, or even twelve years of age, and is much discoloured and fetid, it gives rise to a suspicion which young practitioners cannot be too guarded against. There are, indeed, instances of little girls, not more than six years old, being injured, and it is of consequence to make a judicious discrimination; but there are, on the other hand, instances of a very suspicious appearance as late as the age of *thirteen* or *fourteen*, where no injury could be received without the consent of the party, who is generally perfectly innocent, and where, therefore, the least suspicion would be *very distressing* to her, and might make a whole family miserable.

"Discharges with the worst appearances are frequently removed in eight or ten days, merely by the treatment above recommended, but I have seen cases in the youngest subjects, of a bad habit, where mercury as a *deobstruent* has proved useful, though I could not have the *least suspicion* of a venereal taint. In such cases I have found Ward's white drop a more convenient medicine than any other preparation of mercury; it may be given in the dose of half a drop, and may by degrees be increased to two, and even three drops once or twice a day for two or three weeks; but where this has failed, I have only to add that I have always been able to succeed by giving a decoction of the bark, with balsam. capaibæ ovi vitel. solut. which is always an admirable medicine in the *fluor albus* of adults." Underwood on the Diseases of Children, vol. ii. p. 104.

The following note is subjoined:—"Induced by motives of humanity, I hope I may be permitted to add a word or two to *professional readers*, whose prudence and information may not only prevent a vast deal of unnecessary distress to MANY worthy families, but may even save the life or character of another party suspected of criminality; for besides MANY CASES wherein *inattention* or *ignorance* might give rise to injurious suspicions, there are cases which call for much experience and attention in order to form a just and decided opinion."—"I have indeed known the discharge to be so ill coloured and fetid, and attended not only with pain, *inflammation*, and *excoriation* in different parts; but such *tumour and other appearances of violence offered* about the *furca*, that had the patient herself advanced any charge, I fear I should not have hesitated to have joined in with it; and yet from the event, as well

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well as the whole history of the case, *it had been very evident that no kind of injury had been received.*"

Now I leave it to the candid decision of the whole medical world, if it is not probable that any "young practitioner," who had not been in the habit of attending hospitals, would not on a perusal of the part of Dr. Underwood's book just quoted, instantly suppose that a *spontaneous* discharge from the vagina of young children was a *very* common occurrence, so much so as to make at least a proportion of one out of every five hundred children of every description, and yet I am certain (if any such thing at all exists) from conversations I have had with medical practitioners of very extensive practice both *public and private,* I say I am certain that if any such thing as a *spontaneous* discharge (that is to say without bruise, infection, or the like) from the vagina of *very young* children *ever* occurs, it is not in a greater proportion than one out of *five thousand* patients taken indiscriminately; that there is *a* discharge a great deal more frequently seen from the vagina of young children I believe, because I have heard it from those of undoubted veracity; but I will say, they did not *all* arise *spontaneously;* and however disagreeable the truth may be, *a great proportion of them arose from infection,* the source of which never was investigated.

I do not by any means pretend to insinuate that *criminality* was necessarily attached to any person; for, as I observed in the present case, in Court, "an unwashed hand would produce it." That Dr. Uuderwood's motives for writing as he did were good, I am ready to allow; but I must beg leave to observe, that no practitioner of extensive practice ever *did* or *could* be brought to believe that the combination of symptoms he describes, and also the appearances, was a *frequent* occurrence in *young children* without someway or other infection having been applied to the parts; if it was not too serious a subject it is almost enough to excite laughter (in a medical reader) to read his enumeration of symptoms, and then the extraordinary conclusion he draws from them.

It is much to be regretted that Dr. U. out of so great a *variety* of cases as he seems to allude to, has not at least related *one* in which the symptoms most like gonorrhœa existed, and he could there have *instructed* the "ignorant and inattentive" in the means he employed with such success, to find out that infection had never been applied.

As to my own personal knowledge, all that I can say is, that in an attendance of several years at a large hospital in

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Dublin, I saw so little of the kind, that if I had been where I could ask no other person, I should infer from reading Dr. Underwood's book on the subject of "Discharges from the vagina," that he was speaking of an *endemic* in the Lying-in Hospital of London; I understand from those who attended the Lying-in Hospital of *Dublin*, that venereal ophthalmia is there sometimes seen with new-born infants, and this is accounted for in a very easy manner.

Does it not seem very probable, that the gonorrhœa mentioned by Dr. U. could be much more frequently accounted for in this way than by having recourse to an explanation so very contrary to general experience?

As to his "motives of humanity," I appeal to those who possess in the most *eminent* degree that virtue, what *kind* of humanity it would be in the present instance to have forborne the investigation? the consequence of which might have been, allowing the guilty person to reside under the same roof with the unfortunate infant, who perhaps, when *cured*, would have been *again* infected, or some of her *sisters* have been treated in the same manner.

I agree entirely with Dr. Underwood, that if the investigation does not in a manner offer itself, it would be better to say nothing about it; but surely that is no justification for inculcating erroneous opinions, for I will conclude by asserting, that a discharge of any kind from the vagina of very young children is an extremely rare occurrence.

Let us act as humanely as possibly towards both our patients and their relations, but let *no consideration* induce us to heap error on a science already over-burthened with it, and to eradicate which so many *ingenious men* are at this moment labouring. I am, &c.

LODGE HALL, Surgeon,
(Medical Staff.)

Cork, April 8, 1804.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE reason of my now troubling you, is to remark some critical observations of Mr. Fogo, in your Journal, No. 59, p. 67, on a paper of mine concerning the delivery of the placenta, which you have done me the honour to insert in a former number.

In the first place, he seems dissatisfied with the applica-

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tion of the term morbid. I cannot, I confess, agree with him as to its impropriety, notwithstanding all the arguments he has advanced on the subject. I conceive morbid and diseased to be synonimous terms. Mr. F. supposes it probable that "the placenta remained partly attached to the uterus from its *atonic state*." He will not surely contend that atony is not a disease. Every circumstance occurring contrary to the usual economy of Nature, so as to derange the animal system, may be justly, I think, called *morbid* or diseased. The retention of the placenta, arising from an "atonic state of the uterus," is not certainly to be considered as a *natural* circumstance, and might therefore with propriety be termed morbid. As it is, however, of little use to cavil about words, I shall proceed to consider the more important parts of the case.

Mr. F. is of opinion, that hæmorrhage still continued to exist during the four hours the placenta was retained, and that I gained no advantage by the delay, as the patient *could not* increase in strength. Both these positions I positively deny. The placenta adhered to the fundus uteri, and did not "block up the vagina." If hæmorrhage did exist, there was sufficient room for the blood to have escaped in a fluid state, and consequently it would have appeared externally. The clots I removed did not, as Mr. F. has conjectured, nearly amount in weight to "two pounds or one." It did not exceed what might be expected to have coagulated (during the hæmorrhage, which succeeded the birth of the child) from the recumbent posture of the patient, and was afterwards propelled into the vagina by slight contraction of the uterus.

As to the strength of my patient, it evidently increased to a very considerable degree; during the time I waited, she had recovered in a great measure from that debility I observed on my first arrival, before I attempted to remove the placenta; her pulse, at first excessively weak, was become tolerably strong and regular; her spirits repaired, and her countenance no longer exhibited that cadaverous appearance I described. I may therefore, I think, fairly presume from these circumstances, that no hæmorrhage did then exist. Her importunities for the removal of the placenta (to which Mr. F. attributes her salvation) were the effects of weariness from remaining so long on the bed in an uneasy posture, and a consequent wish of being changed and placed in a more comfortable situation. The subsequent faintings were, I conceive, occasioned partly by the pain felt from the introduction of my hand into the uterus, which had somewhat receded and contracted, and partly by her dread of the operation. "I

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" I also (as Mr. F. expresses himself) am one of those who can see no safety in allowing the placenta to remain four hours, (or one) in case of an existing though not apparent hæmorrhage." If I had the slightest cause to suspect its existence, I should remove every thing which would impede the contraction of the uterus without hesitation, and whether I suspected it or not, I should not, as Mr. F. *pleasantly* supposes, " sit pulling the cord," thereby increasing or perhaps causing the evil I wish to avoid. In the case in question, I gently strained the funis five or six times in the course of the four hours (for about so often the pains occurred) in order to ascertain whether contraction (indicated by pain) had at all furthered the expulsion of the placenta. Mr. F. may probably be a greater adept at pulling a cord than myself, for he seems to have rung round the changes merrily on me and Mr. Marson; I leave others to determine with how much judgment.

I shall only add, that the arguments of Mr. F. are not at all calculated to convince me of any impropriety of conduct in this particular, and that if a similar case should occur in my practice, attended with like circumstances, I should, notwithstanding the plausibility of his reasoning, act in just the same manner without dreading the result.

I am, &c.

Nailsworth, Gloucestershire, April 10, 1804. O. W. BARTLEY.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

SINCE I first applied myself to the study of Medicine, I have been accustomed to note, in a kind of Common-Place-Book, such ideas and observations as I conceived to be new and peculiar to myself, and likely to prove interesting in their consequences; consisting chiefly of projects and speculations, tending to the improvement of practical Medicine. I review them periodically, and expunge such as further reading or conversation teach me to be unimportant, or to have occurred previously to another. A few remain, which, if you think them worthy of public notice, I offer for insertion in your very valuable Journal. I could name not a few instances, in which; from a reference to dates, I see clearly that I might have claimed

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claimed to myself the full and uncontested merit of having first thought on projects, which have proved to others a source of very favourable reputation; but my speculations were confined to my Note-Book, and I have no reason to complain. Some of my projects may, possibly, have already occurred to others, may have been published perhaps; I shall not, be assured, in any one case, knowingly arrogate to myself the property of another. My communications, indeed, (for I mean, with your permission, to occupy a page or two of your interesting publication occasionally) will not, I fear, be such as medical men would choose to acknowledge, or of which they would think it worth while to dispute the possession.—Once for all, however, I commit to your hands the full power of withholding such part of them as you may deem either not new, or not sufficiently interesting for publication.

Should it accord with the Plan you have proposed to yourselves for the conduct of the Medical and Physical Journal, to admit anonymous communications of this nature, I am not without hopes that others, possessed of more talent and experience than myself, may be induced, from time to time, to add to the Stock of

MEDICAL LUCUBRATIONS AND SPECULATIONS.

1. *Submersion in Hydrophobia.* Many years have elapsed since it was proposed to immerse a person, labouring under hydrophobia, in water, so as almost to drown him. I would go further, I would actually keep him under water until he should have ceased to move, until the entire of the functions seemed to be suspended; but I would have at hand all the modern resuscitative apparatus of the best kind, Galvanic troughs, an electrical machine, &c. to be employed as soon as the superintending physicians should think proper. Death might ensue, it is granted; but if I had the misfortune to suffer, in my own person, from *rabies canina,* I should, most certainly, wish to have this chance (such as it is) of recovery. Does any known mode of treatment present a better? We meet with some dreadful and desperate cases of tetanus and melancholia on record, in which it might have been excusable to try such an experiment.

2. *Inoculation of the Measles.* I am not altogether ignorant of what has been, heretofore, published on this subject; but I think that I see a new and a more certain source of morbillous virus. I would rub in, assiduously, on the breast, on the day just preceding that on which

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the eruptions would be expected to appear, a little of the unguent. antimon. tartarisat. in such manner that the pustules, excited hereby, might come forward and be blended with the exanthematous efflorescence of the measles I would inoculate with the fluid contained in these pustules. No harm could, I believe, ensue; and the party from whom the virus is procured, would, probably, be benefited by the irritation of the surface of the breast.*

3. *On the Extinction of the Small-Pox.* I have doubts how far it is advisable to attempt its utter extinction in this country, unless our continental neighbours, or, I should say, unless the entire of the inhabitants of the globe co-operate with us; since it is *possible*, however earnest and general may be our exertions to exterminate it, that it may shew itself again in this country in the course of forty, fifty, or sixty years hence; since it is established that the susceptibility of any contagious disease is in an inverse ratio to the frequency of exposure to its contagion; and since it is obvious, from the bills of mortality and the history of the small-pox, that the air of Great Britain has not been, at any one time from the first introduction of the small-pox among us, entirely free from its effluvia, to which we are all, unknowingly, every day exposed: I argue that, on the re-appearance of the small-pox in Great Britain, with the interval above supposed, the entire of the present generation may have acquired a new susceptibility; that these, who have had the Cow-pox, nay I would say, that those, who have actually had the small-pox, may not be exempt from its further ravages, under the above-mentioned circumstances. Have those persons, supposed to have had the small-pox *twice*, passed the intervals in places entirely, or in part, secluded from its effluvia, as *in the country*, or *at sea?* Need I adduce the case of the celebrated Genevese physician, Bonnet, in illustration of my argument? He had enjoyed considerable practice for nearly forty years, when he retired into the country. He had here passed about ten years, seldom, if ever, visiting the sick, when he was called to see a young man, ill of small-pox; he now took that disease, to which he was before exposed times innumerable with impunity. See Bibliot. German, vol. 3, Note, about the middle of the volume.

Bristol, April 10, 1804.

[To be continued.]

* This speculation appears to deserve attention; but if Dr. Blackne's Theory (No. 57, p. 464) be true, the measles so produced will be ded with pustulary eruptions. Ed.

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

A Reader, not of the Faculty, will be much obliged to any gentleman who, in your Journal, will communicate the cause of the illness of a fine little boy, within a fortnight of two years of age, lost the beginning of January last.

Tuesday the 3d, he had gone down stairs by himself, clothed in a great coat against cold, to look for his breakfast, but soon returned without it. The morning was cold and a little frosty. The same morning, before nine o'clock, he ate a good breakfast as usual; but, about ten, he came to look for his mother, seemingly cold, and expressing pain, cold, or uneasiness, by a whine. He had previously discharged a considerable quantity of purgative, slimy sort of stool: from that time he was kept quiet and in the lap. At his dinner time he refused his usual pudding, and through the evening would take nothing but tea or drink. His sleep at night was very unquiet: some rhubarb in currant jelly was given to him; after which he seemed somewhat easier.

In the morning of Wednesday the 4th, a gentleman of the faculty saw him, and sent some saline mixture, calomel, and a blister, the size nearly of a man's hand, for his stomach. His stools had become greenish; the fever, during the day, awaked him with a start whenever he fell asleep, and the case was considered and treated as bilious. At night he moaned for hours, and was in a state of fever with scorching heat; the blister was on him and had risen. The dejections were still greener.

Thursday the fever was considerably abated. He slept much, seemingly comatose. His apothecary agreed to have a physician sent for, who came, but not till past the middle of the next day. He had taken nothing but a very little tea during his illness, and had become very weak, wasted, and emaciated, with sunken and hollow eyes.

Friday, three in the afternoon, the physician saw him, and observed his very laborious breathing, which happened then, but had been only occasional, and afterwards went off. His dejections being green, calomel was prescribed, and a blister for the inside of each leg above the ancle. His life was not expected. But,

Saturday morning, although during the preceding night the

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the hiccough had been often heard, he seemed a little revived, and rather to enjoy gruel. Dejections were not quite so green; debility increased; his sleep, coma.

Sunday morning, about three o'clock, he was convulsed, seemingly with approaching death; and, after several fits, expired soon after six o'clock.

During most of his short illness, he continually rubbed his nose with his left hand. His habit previously to his illness had been rather plethoric; but he had been otherwise healthy and strong, excepting an occasional weaknesss when on his legs, from teeth, as was judged: he had sixteen perfectly out, and was then cutting the last four at each of the extremes of either jaw. He had no cough of any seeming consequence, nor cold; unless it had been taken in the bowels the preceding Monday or Tuesday morning, by a sudden change of the weather from warm to frosty; or by some momentary and unobserved exposure to the cold air.

His diet had been plentiful, but not gross. No butter, very little meat, no beer; very little good port wine, occasionally.

The weather had for some weeks prevented his being much taken out, but he was not confined to warm rooms; ran about a hall with the door open; and, when fine and clear enough, upon a gravel walk in a garden.

An answer to this case by any Correspondent, or a reference to any book or treatise, *De præcipuis prope biennium infantum, morbis, & eorum causis,* will much oblige,

April 10, 1804. ACADEMICUS.

CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

Researches into the Properties of Spring Water, with Medical Cautions (illustrated by Cases) against the Use of Lead in the Construction of Pumps, Water Pipes, Cisterns, &c. by WILLIAM LAMBE, M.D. *late Fellow of St. John's College, Cambridge.* London, pp 204.

THE main object of the author in this Research is, to spread an a (if well founded, a very wholesome alarm) of the deleterious propecities

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properties of all kinds of water in common use, when kept even in slight contact with lead. It may be considered as extending the cautions relating to this noxious metal so admirably laid down by Sir G. Baker, by Dr. Heberden, and some other sagacious physicians; but Dr. Lambe carries his enquiries to a much greater extent than has hitherto been done, and his cautions implicate the prudence of almost every individual domestic economy in the supply of that most important of all necessaries of life, water.

"Have we any reason to think," the author asks, "that this fluid can receive a contamination from the substances with which it is frequently brought into contact? Of all these substances LEAD is that which is most commonly used, and is preferred to other metals, on account of its cheapness, the ease with which it fuses, and its great ductility, fitting it to be readily moulded into convenient forms. But these advantages may be esteemed rather to be a public calamity, if the metal communicate to the fluid its own deleterious properties. The question then, whether water in its ordinary condition has a power of dissolving lead, is, from the frequent use which is made of it, of the first importance to society.

"The general practice of the country seems to have decided this question in the negative. Whatever may be the suspicions of some, they have not been sufficiently strong to produce much effect on the public mind, nor scarcely any influence on our domestic arrangements. Many towns are principally supplied by water conveyed from a distance by leaden pipes; families preserve it in cisterns formed of lead; some public breweries, I am told, have similar cisterns on a large scale, in which the water is allowed to stagnate; pumps so formed are put down every day, in every situation, and in all sorts of wells; and I know not that any one asks the question, whether or not, by these arts, a large portion of the public is daily and hourly consuming a quantity of the most virulent and insidious poison."

The subject involves several important questions, and the author very properly considers the evidences of disease being produced solely by certain waters contaminated by lead, the diagnostic symptoms of this disease in different constitutions, and especially the proofs afforded by chemical examination of the existence of lead in these suspected situations.

The latter question furnishes the principal original matter in this volume. After giving a slight sketch of the *colica pictonum*, and the modifications of the poison of lead in different constitutions, the author observes, that it will naturally be asked, "If leaden machinery for conveying water is really so mischievous as is supposed, how happens it that the saturnine colic is not common over the whole kingdom, and endemial in those places, where this machinery is in common use? The objection is certainly so far well founded, that it must be acknowledged, that the saturnine colic, though probably much more frequent than is commonly supposed, is but

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of rare occurrence, nor are even the pains of the bowels, which participate of its nature, by any means frequent, regard being had to the great number of persons, who are in the daily habit of using such waters.

" There are two reasons which may be given for this fact. The first is the minuteness of the dose. In my assay of a water, which I suspect to contain much more lead than is common, I calculate that the quantity dissolved is little more than a tenth of that which has been said to be contained in wine adulterated by litharge.

" A second obstacle, and one which is perhaps still more powerful, is the peculiar manner in which the metal is combined, as it is found in these solutions. This is not the place to enter at large upon this subject: it is enough at present to observe, that it is involved more or less completely in all of these waters with a matter, which seems to be of a vegetable nature. This union is in many cases so perfect, as to require the application of powerful chemical agents to dissolve the combination, and exhibit it under its common forms and relations. Thus it would appear, that the stomach and intestines are defended from its immediate action, in some cases totally, in all partially; and thus are the pains and spasms, which are the consequences of this immediate action, prevented."

Pursuing this idea of the very gradual introduction of this poison, he observes on the permanence of the symptoms, " the diseases engendered by lead seem to be in their nature lingering and chronical. In cases where preparations of this metal have been given as a medicine, and its use continued but a very short time, it has been known to occasion a disease of such obstinacy, as to require a very considerable length of time for its removal. Thus, we are informed, that four grains of cerussa acetata, taken for no longer a time than three successive days, " occasioned intolerable uneasiness in the bowels for some months." It is a commonly received opinion, founded, I believe, on actual observation, that the longer the force of this poison has been accumulating before producing evident disease, the more dangerous has been the disease when produced, and the longer has been the time required for its effects to wear off. This is known to be the law observed, when it has occasioned saturnine colic, and in this instance we may safely confide in analogical reasoning, though the symptoms be anomalous. As in disease from poisoned waters, the evident mischief is much more slow and gradual than in all others, that have been hitherto noticed, the same law may be expected to hold good in a still higher degree. Accordingly, in the instances which have occurred to myself, the restoration to health has been very gradual: three or four months have been required, before a considerable amendment has taken place; a twelvemonth or more, before the complete re-establishment of the health."

Several cases are given of obstinate and in a few instances fatal diseases, which the author ascribes to this metal; some of these cases do not appear altogether satisfactory. The medical part concludes

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cludes with the following recapitulation: "Such is the result of my own experience, and of a few authentic facts which have come within my knowledge. I think it established by these observations, that the solutions of lead by spring water are sufficiently powerful to excite every one of those symptoms, which are allowed, by the first medical authorities, to be the genuine and specific offspring of this poison. These are the peculiar and excessive pains of the stomach and intestines, severe muscular pains principally seated in the fore arms, and the paralytic weakness of the limbs, particularly of the hands and arms. Besides these, some other forms of disease have, I hope, been fully and satisfactorily traced to the same exciting cause. Some of these must as yet be deemed anomalous, as not being received into the established classes of systematic writers.

"I cannot but conclude, that lead ought never to be brought into permanent contact with water, which is intended in any form to be received into the human body.

"I might adduce very many other instances of disease, which I believe either to have originated, or to have been greatly aggravated by the same cause. I am particularly convinced that it gives a strong disposition to apoplexy. Many paralytic tremors, obstinate constipations, perpetual vomitings, tympanies, tumors of the abdomen in females, glandular swellings and schirrosities, have I believed to have been so caused, exasperated, or rendered fatal."

The author concludes with giving the chemical experiments which have enabled him, as he supposes, to detect lead in minuter proportions than any hitherto known method has been able to do.

The common test for this metal is sulphuret of potash, or water impregnated with sulphurated hydrogen gas. These tests, added to an extremely weak solution of lead, turn it first brown, then black, and by repose a dark sediment subsides. The author asserts, however, that where the quantity of lead is too small to be indicated by the simple application of the test of sulphurated hydrogen, it may be detected in the manner described in the following passage: "In operating on these waters, I have distinctly noticed four different appearances.

"(A) The test forms a dark cloud with the precipitate, re-dissolved in nitric acid.

"(B) Though it forms no cloud, the precipitate itself becomes darkened by the test.

"(C) The test forms a white cloud, with the precipitate treated as in (A). These two last appearances may be united.

"(D) The test neither forms a cloud, nor darkens the precipitate.

"(E) In the cases (B, C, D,) heat the precipitate, in contact with an alkaline carbonate, to redness, dissolve out the carbonate by water, and treat the precipitate as in (A); then the test forms a dark cloud with the solution of the precipitate. In these experiments it is necessary that the acid used to re-dissolve the precipitate be not in excess; if it should so happen, the excess must be saturated,

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before the test is applied. It is better to use so little, that some precipitate may remain undissolved."

Another way of using the test, which the author proposes, is to add muriate of soda to precipitate the lead in the form of a muriate, to heat this to redness with carbonate of soda, dissolve out the superfluous alkali, treat the residue first with nitric acid, and lastly with the sulphureous test.

A third method is by reduction of the metal, and certainly the most satisfactory, but inconvenient from the great bulk of water to be analysed in order to obtain sufficient lead to decide its identity.

With regard to the time necessary for giving spring water a sensible saturnine impregnation, when in contact with lead, the author thinks that a very few hours are sufficient, to judge by experiment.

Some other chemical observations are added, for which we must refer the reader to the work itself; we are compelled to add, however, that some very unsatisfactory inferences are given, and many of the author's experiments are too unfinished, and performed on too small quantities, to appear with that weight which the medical part of the volume required, and which perhaps their intrinsic value deserved.

The author has succeeded in making out a strong case for the public attention; and the specimen before us leads us to hope that he will consider himself engaged to pursue a subject which applies perhaps as extensively as any other single cause of disease, and in a form the most likely to elude suspicion.

Discourses on the Management of Infants, and the Treatment of their Diseases, written in a plain familiar Style, to render it intelligible and useful to all Mothers, and those who have the Management of Infants. By JOHN HERDMAN, M. D. Edinburgh.

THE first article in the sum total of every yearly bill of mortality must strike the most superficial observer with astonishment mixed with a degree of horror, *more than one fourth of the human race perish in the first year of life!* To what is this waste of human life to be ascribed? Is it a necessary part of the general plan of human reproduction? or is it owing to culpable negligence, mistaken notions, or ill directed care in the parents? The author in this popular address to mothers entirely adopts the latter opinion.

"Is it appointed, in the nature of things, that so great a proportion of mankind are born to die in infancy? No, the idea is impious, and directly arraigns the very Author of Being. He has formed them to live, and their premature death is none of his doing It is owing to mistaken notions, and misguided reason; to a miserable and a total oversight of all the institutions and intentions of Nature, in regard to their treatment; to practices the most absurd and unfounded; in one word, to the most horrid and culpable mismanagement."

The author here speaks the truth, but not all the truth; that which

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which he adduces as the cause of all this mortality, is only one of its causes, extensive indeed, but by no means so prominent as to be thus exclusively mentioned. Hereditary disease, or at least tendency to disease, defective stamina, absolute neglect and want of natural tenderness on the part of the parents, and many other causes conspire to produce this formidable sum total of destruction. However we shall not dwell any longer on this question, for the reader must be well aware that these are causes which no popular discourse like the present can ever reach; and the precise evil which the author opposes, is sufficiently extensive to excuse this partial exaggeration, if it can increase the force of the appeal. To those mothers therefore who eagerly wish to bestow every care upon their helpless offspring, even to those who are much more likely to *kill with kindness* (to use a popular phrase) than to injure by indifference and neglect, this appeal is addressed; and the importance of the subject gives an interest and dignity even to the minutest detail of the nursery.

The author begins his plans of reform by an attack on the matrons of the lying-in chamber.

" There is one thing in which you err, and that is, your implicit confidence in the judgment and opinions of your midwives and nurses. You allow and desire them to prescribe, not only for your infants, but also for yourselves. You take them out of their own sphere, and you dignify them with the office of the Physician. They are employed about they know not what, and they deal destruction around them.

" On the other hand, if you are willing to give them consequence, they are as willing to take it. They consider the management of you, and your infants, as their own peculiar province; they are jealous and fearful of the least interference; they give a profusion of advice, but they take none; they insinuate that it is they, and they only, that know any thing of the matter; they are wise in their own conceit, and their conceit and obstinacy are only equalled by their ignorance."

Having enlarged upon the incapacity and bigotted folly of the matronly counsellors, we are introduced to one whom the author looks up to with implicit confidence.

" But I must now tell you, that the fit and proper management of the infant state, is not to be found in experience alone. It is to be found in more sure and infallible grounds, than either experience or reason; it is to be found in the fixed and established laws of Nature; in laws which Nature has implanted in the breast of every living being, human or brute, and which are no less stable than the very foundations of the earth itself: in one word, the fit and proper management of the infant state, is to be found in the sure and unerring principle of *instinct*."

This has often been said, and in support of the all-sufficiency of instinct the example of inferior animals has constantly been adduced, whence the following inference:

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" Thus, you may learn, that, in the general œconomy of life, reason is a frail and erring guide, and that instinct is a much more sure and certain director. Observe also, that those animals more immediately under the direction of man, as horses, cows, and other tamed animals, are much more subject to disease and death than wild animals, or the same species in the wild state. When left to the direction of their natural instincts, they enjoy uninterrupted health; but, subjugated to the caprice of man, they become partakers of his calamities."

However, it will always be answered to such general reasoning, that the customs of the society in which we live (whether right or wrong) have given rise to circumstances totally artificial, to which mere instinct can never apply: the domestic animals subservient to the use of mankind are themselves artificial; and it is only by thwarting many of their natural instincts that we can make them what we want.

But to proceed to particulars; for it is easy to say to parents, " your infants are subject to fatal diseases in exact proportion to the progress of your luxuries and supposed refinements;" the truly valuable secret of rearing children is to ensure vigorous health in the midst of these luxuries and refinements; and since, in such a state of society, the dictates of instinct will not suffice even for the management of the nursery, reason and experience must be called in to supply the deficiency.

The first custom which the author declaims against, is that of washing new-born children. The objection is at least original, we shall therefore give it in the author's words.

" The infant born, the first thing that engages the attention of the good woman in attendance, the midwife, or nurse, is the cleansing of his skin. This is reckoned a most necessary piece of duty, and much does he suffer by the operation.

" He suffers from no less than five causes, First, from exposure to cold. Secondly, from being tossed and tumbled about upon the nurse's knee. Thirdly, by friction by her rough and rude hands. Fourthly, from the nature of the cleansing substance. And fifthly, he suffers, and he suffers most severely, from the excoriations and inflammations which follow this officious cleansing of the skin.

" But, why should all these things be done? Why should the infant's skin be washed or cleansed with spirits, or wine, or ale, or butter, or pomatum, or soap and water, or plain water, or any other substance whatever? All these, and more, have been, at one time or another employed; yet, why should any one of them be employed? or, why should the infant's tender and delicate skin be subjected to such treatment? If there be any good reason why it should be done, let it be done; but, if there be not, let it be left undone.

" This coating or covering which the infant obtains in the womb is surely not put there for nothing. Be assured that Nature has some wise and necessary design or purpose in the matter; for it adheres,

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heres, and it adheres most firmly to his skin: and, if left to itself, in a certain period after birth, it dries, and forms a crust, and gradually scales off in the œconomy of Nature, and leaves the skin it covered, heal and healthful, and capable to bear every common or necessary freedom.

"The parts of the infant's body most subject to excoriation and inflammation are the parts which come in contact with each other, where skin is applied to skin, as the neck, arm-pits, and groins. Now, on these parts, the natural coating, the covering which the infant obtains in the womb, is thicker than on almost any part else. Nature, conscious as it were of excoriation and inflammation in the neck, arm-pits, and groins, has provided against these ills, yet are her intentions frustrated by ignorant and officious care.

"But, suppose, if you please, that this covering of the infant's skin is intended for no purpose, suppose that it neither serves the purpose of warmth, nor defence, nor prevents fretting nor inflammation, yet why should it be removed? It is neither poisonous, pestilential, nor deadly; it will neither contaminate bed-clothes nor body-clothes, nor will it cause disease; it is as innocent as the infant it covers. As I have already told you, it dries, and forms a crust, and gradually scales off in the œconomy of Nature, and leaves the infant's skin heal and healthful, and capable to bear every common or necessary freedom.

"Disease, however, is a necessary consequence of its removal. It adheres, and it adheres most firmly to the proper skin. It is as it were a first skin, to be thrown off, in a certain period after birth, when the proper skin becomes fitted to perform its office, or to bear the action and contact of external things. It cannot be touched without injury. Nay, it adheres so firmly to the head, the neck, the arm-pits, and groins, that it cannot be removed without removing the skin itself. But the skin is injured by its removal in any degree; it is injured by the rubbing of the hand, and by the substance employed in its removal. These causes bring excoriations and inflammations and severe pain. Then comes the need of your drying and absorbing powders, your white lead, your tutty, and your burnt rags. By this officious cleansing of his skin, your midwives and nurses bring much suffering to the infant, and much trouble to themselves.

"What, then, have they to do? They have nothing to do but to take the infant's skin as Nature gives it them; nothing to do but to dry it, in the most kind and gentle manner, with the receiver, or a piece of old soft spongy cloth, warmed at the fire, and then proceed to clothe him."

Whether cleanliness be a natural instinct or an acquired habit, as it forms one of the best refinements and greatest decencies of civilized life, we should be sorry to see an iota of it given up to such an idle hypothesis. Let the author, if he pleases, exclaim against wine, ale, brandy, and chilling lotions; they are to be condemned, chiefly because they do not answer the purpose of clean-

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liness so well as simple warm soap and water; and we are certain that there is not a decent lying-in chamber in the kingdom, in which such systematic want of neatness would not be heard with utter disgust and abhorrence. We fully believe that bodily purification, of herself and her offspring, is an universal *instinct* with the female sex, under such circumstances; and this extends to inferior animals, as will occur to every one who is acquainted with the process of birth, without our enlarging on a subject which, on no other occasion, we should have thought it seemly to introduce. With regard to the imagined injury done to the infant's skin, one would think, by the author's representation of it, that the poor child had undergone the operation of sand and a scrubbing-brush, and not a gentle friction with the nurse's soaped hand; which, rough as it may be, is gentler, and less excoriating than the finest damask towel.

Clothing is the next circumstance that engages the Author's attention, and calls forth his censures. Here, however, he is aware that he is not treading a new path; most of the absurdities and miserable consequences of the old system of swaddling and tight bandaging *have been* corrected, and all that is urged from the example of uncivilized nations for the benefit of ease and unconfined clothing, would have applied with much more propriety a century ago than to the present day. Beyond this single point the comparison will not hold; the Negroes, the Caffres, the Egyptians, whom the Author cites with so much approbation, have a very easy task to rear their children in a climate where all clothing is unnecessary, and is actually never put on till the age of puberty; where the new-born infant may bask naked in the sun, and sprawl about at pleasure on the warm sand. But what has this to do with the arduous task of nursing the child of the bleak and foggy North? the offspring of civilized society inheriting a delicate *town-bred* constitution, and from necessity immured in the confined streets of a populous city.

The following simple clothing is advised.

"On these principles, therefore, let the new-born infant be clothed in the following plain, simple, and easy manner. Let his head be covered with two caps, the first of flannel, and the second of cotton; and let the first be slightly stitched within the second, forming a lining to it as it were. Thus they may be both put on at once, and the uppermost may be tied loosely below the infant's chin. Then let his whole body, as well as his arms and legs, be covered with the finest cotton cloth, by way of shirt, made loose and easy, and to tie before; and then let him be wrapped in a fine, soft, and warm flannel wrapper, and laid to rest; laid into your own bosom, or into the bosom of a nurse."

In the usual dress of an infant a bandage is put round the belly, chiefly with a view of supporting the navel, and preventing umbilical protrusion. We are disposed to agree with the Author, that the idea of danger of rupture during the separation of the small portion

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portion of umbilical cord that is left, is entirely without foundation.

The feeding of the infant next engages the Author's attention. He mentions, with just reprobation, the many absurd ideas, and still more absurd practices, relative to the expulsion of the meconium by purgatives. Our readers need not be reminded, that the first stools of the healthy infant contain this thick brown matter called *meconium*; and that the first milk afforded by the mother has a gently purgative quality, which favours the expulsion of this peculiar matter from the infant's bowels.

The long retention of the meconium is generally allowed to disorder the infant, and hence the utility of early purgatives in those cases only where the child is debarred of its natural food. But the Author very properly objects to the common practice of cramming children as soon as born, and intended to suck their mother, alternately with unnatural physic and unnatural food, when the first element that Nature has provided for them is at the same time wholesome food and salutary physic. We know it is a mighty difficult task to persuade the good women, that a new-born child does not come into the world hungry, and the sole interpretation that they can give to its cries is food! food! food! Though the peculiarities of the fœtal circulation would not be so well understood in the nursery, every sensible mother must at least feel the force of the following appeal.

"Such are the effects of the artificial purgation of the infant; and such also are the effects of another practice to which he is subjected; I mean, the feeding him with wheys, panadas, and gruels, before he is applied to the breast.

"The source of your error is this. You think that the infant may starve before you are ready to give him the breast. But this is a vain thought, for he is in no danger of starvation; his blood is rich in nourishment, as it were; he had a constant supply till the moment of his birth; and this supply is fully sufficient for the purposes of his œconomy till the changes of his birth are effected; till his own organs, his stomach and bowels, are ready to digest and prepare his nourishment, and till you are ready to give him the breast. Besides, how can you suppose that Nature would leave a matter, so essential to the welfare, the preservation, and existence of the infant, so ill contrived? And pray what do the young of the inferior animals get before the mother's milk is ready for them? No one thing whatever; it is ready so soon as they require it, or so soon as they are ready to receive it.

"This is a universal law of Nature, a law which obtains with you, as well as with the inferior animals, that the milk of the mother is in preparation, and in readiness, at the very time her offspring require it, or are ready to receive it; or, in other words, the infant's necessity for food, and the mother's ability to supply it, exactly keep pace or correspond with each other."

The next subject is one in which the feelings of mothers are peculiarly

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culiarly engaged, a subject which has often employed the pen both of the most eloquent and of the most experienced writers; it is, the duty and propriety of mothers giving suck to their own offspring. The very possibility that such a question should ever have been agitated, implies some great, some radical defect in the present state of society. The Author scarcely assumes the tone of the moralist, but merely that of the medical adviser; his object is not so much to persuade the wavering mother that she *ought* to devote herself to her child, as to convince her that she can do it safely, however delicate her own constitution may be, and that the health of her infant imperiously demands it. He thus addresses her.

"What, then, can prevent you from nursing, when you have not been mismanaged; when you fall into no disease; when the secretion of your milk takes place in the natural and ordinary course? Yet, even in this case, you frequently say that you have not a sufficiency of milk! or that it is so poor and thin, and not sufficiently nourishing!! or windy and unwholsome, causing disorder and disease in the stomach and bowels of the infant!!! On one or other of these grounds you either do not nurse at all, or you nurse, but feed the infant also with other substances; with panadas, gruels, &c.

"But let me ask, are you not a mother? Have you not nursed and nourished your infant in the womb? And have you not brought him into the world naturally and properly formed; a mature and a perfect infant? You have performed the one half and the first part of your duty, and you have performed it naturally and properly. Why, therefore, should you not perform the last part as well as the first? Are your fluids more scanty after the infant's birth than they were before it; or more poor, or more thin, or less nourishing, or less wholesome? In a word, have you suffered any change since the infant's birth; or have you fallen into any disease? If not, why should you not nurse and nourish your infant at the breast as well as in the womb? There is surely no one thing to prevent it, unless there be something wrong in the original formation of your breasts, or unless you want nipples.

"Even the milk of another woman is not a proper food for your infant; for it is foreign to his nature; it is not a product of the fluids by which he was formed and nourished in the womb. Some time has also elapsed since another woman's delivery. Her milk is not the milk of a woman newly delivered; it has undergone a change; it is not adapted to the digestive powers of the new-born infant; it is considerably indigestible in his stomach; it produces diseases in his stomach and bowels, and which disease continues till by habit his stomach acquires the power of digesting it; a power, however, which it may not acquire during the greater part of the period in which he is suckled."

From a popular appeal, like the present, general arguments and general applications can only be expected; otherwise, we might observe that however advantageous it might be to the health of the most

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most delicate mother to suckle her infant, it does not necessarily follow that the child would receive equal benefit. When the author speaks of the nourishment within the womb, he seems to take it for granted that all children come into the world healthy and vigorous; but is it not fair to suppose that the slim, puny infant has *not* been duly nourished before birth? and that the first and most essential step to bring it into a thriving state is to substitute for its mother's, the nutritious fluids of a more vigorous nurse? In this we think we may confidently appeal to experience.

The management of temperature and exercise in the earliest months of infancy, and the time and mode of weaning, occupy the remainder of this little treatise. On the subject of exercise the following caution is given, which merits attention, as it often arises from anxious but mistaken care in the most tender mothers. It is the injurious practice of sending out very young infants in bleak angenial weather, perhaps in intervals snatched between showers, to take the air in the arms of the nursery maid.

"But to send an infant abroad in the view of exercise is truly ridiculous; for where is the exercise of being carried motionless in a woman's arms? The exercise is to her, and not to the infant. By the exertion of walking, and of carrying the infant, the heat of her body is preserved, her feelings are kept agreeable, and she receives no injury; while the poor helpless innocent, motionless in her arms, is losing heat every moment; is starving alive as it were; is suffering all the pains and injurious effects of cold.

"Now, the difference between the woman who carries the infant, and the infant himself, must strike you. She can walk and exert her own muscles. By this power of action all the injurious effects of temperature are prevented, and she receives all the advantages and all the benefits of air and exercise. But the infant has no such power, and therefore cannot receive the true benefits of air and exercise till he acquires it; till he is able to walk and to exert his own muscles."

There is much good sense in this observation; it must strike every attentive observer who is constantly seeing the blue-cold, shivering, crying infant, paraded round the windy squares and open walks of this metropolis, in weather in which the grown up man quickens his pace and buttons up his great coat.

On the whole, we have perused this little treatise with pleasure and satisfaction; nothing indeed of importance is contained which is not found in Cadogan, Armstrong, and other guardians of infancy; the minutiæ of useful advice are almost entirely omitted, but the style is argumentative and the manner popular; and the mother, or future mother, that casts her eyes upon it, will not readily leave the perusal unfinished.

History

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History of the Proceedings of the Committee appointed by the General Meeting of Apothecaries, Chemists, and Druggists in London, for the Purpose of obtaining Relief from the Hardships imposed on the Dealers in Medicine, by certain Clauses and Provisions contained in the New Medicine Act, passed June 3, 1802, together with a View of the Act, as it now stands, in its ameliorated State; to which are added, the Substance of every Clause in the Acts of June 3, 1802, and July 4, 1803, and the Clauses of both these Acts, collated with each other, consolidated and explained; also a copious and carefully arranged Schedule. With explanatory Notes and Observations, by WILLIAM CHAMBERLAINE, *Surgeon, Chairman of the Committee.* London.

THE observations of which this pamphlet is composed, have already appeared in different Numbers of the Tenth Volume of this Journal. Mr. C. has here collected them, and made the most important addition of the Schedule, in which the list of the taxable articles is given. Of this Mr. C. thus speaks:

"And as the Schedule is part of the Act itself, so, conceiving that the work would, in some measure, be incomplete without it, I have, in a copious and carefully arranged Schedule, faithfully enumerated every article inserted in the Schedules of both Acts of Parliament, wherein are clearly and distinctly shewn all the articles in each, now liable to the medicine duty; all those which were made liable by the former Act of 1802, but are now exempt; and those which, though omitted in the Schedule of 1803, may, under certain circumstances, be liable to the tax.

"This, it is conceived, may not only afford material information to Druggists; Apothecaries, who keep shops for retail practice; country dealers, many of whom embark largely in the drug trade, and also merchants who export drugs to foreign parts, but may also be found of some use to Magistrates, before whom informations may be brought under the Medicine Act, as pointing out, as far as my judgment enables me, every circumstance wherein conviction should or should not follow. If, as we are all liable to error, (and especially, in cases where a writer, ignorant of law, presumes to discuss a subject connected with the law of the land), any errors may be found, all such as may be pointed out, shall be thankfully acknowledged and carefully corrected in a future edition, provided the demand for the present work should shew it to be of sufficient importance to the public to make a future edition necessary."

The history of these proceedings exhibits great sagacity, zeal, and good sense in the Committee, and on the part of Government such polite attention and liberal concession. Every person concerned in the sale of medicines in general must acknowledge the suitable spirit which actuated the latter, and should feel highly thankful to the Committee for having relieved him from the

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harrasing uncertainty of the former law, and the unintentional oppression to which he was exposed in its execution.

To Mr. C. in particular, as a very active Chairman of the Committee, these thanks are especially due, and we doubt not will be generally felt, and willingly paid.

The Schedule is also curious, as it gives an authentic list of the most popular *shop* medicines in the kingdom, or those which are usually taken without the previous advice of a regular medical man.

An improved Method of treating Strictures in the Urethra; by THOMAS WHATELY, *Member of the Royal College of Surgeons, in London.* 8vo. pp. 230. London, 1804.

WE have on a former occasion (No. 27, p. 479, &c. and No. 28, p. 572, &c.) commended the zeal and industry of Mr. W. in improving the treatment of diseases of the urethra, and particularly his attention to safe and lenient means, in preference to the harsh, painful, and dangerous modes proposed by others. In the present work, which may be considered as a distinct treatise from the former on the same subject, the mildness and safety of the practice are carried much farther; probably, as far as they can be carried without becoming ineffectual or too tedious.

Mr. W. thus explains his own views. "The main design of the present work, is to recommend an improved method of treating strictures of the urethra. The public is already in possession of some remarks I made on Mr. Home's practice: but having seen, since their publication, additional objections to his method of treatment, the reader will find some further observations on it in the volume now before him. I should apprize him, however, that the animadversions contained in this treatise, relate entirely to what is advanced in his former volume on the subject: his second volume I did not see till these sheets were in the press. I observe that in this last work he has not attempted to refute any of the observations made upon his practice in my former essay; nor does he seem to pay much regard to the dreadful consequences so frequently produced by his mode of practice; but proceeds, without any material deviation from his former plan, by forcing a passage with a large armed bougie into the bladder. These consequences, in my opinion so pregnant with evil, are detailed, as in his former volume, with an indifference which might lead to the supposition that they are the unavoidable effects of the most judicious mode of treatment. I have differed from him in sentiment, and an imperious sense of duty to the public compels me to avow it. I have discharged that duty; and "I am very well satisfied," to adopt the language of Mr. Home, "that the public should judge between us by an impartial consideration of our works."

The first chapter is devoted to a general view of the subject; the different degrees or kinds of stricture; the usual causes, symptoms, and

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and consequences of stricture, and a description of the proper bougies.

The second chapter contains the author's new improvement, which we shall give in his own words. "In the preceding pages I have endeavoured to show, that strictures of the urethra are not merely contracted fibres, but really diseased portions of the membrane lining that canal, with a continued disposition to increased contraction. In this view of the disease, it seems probable, that the application of a remedy, calculated both to remove the diseased affection, and to dilate the contracted part, might perfectly cure the complaint, without putting the patient to the inconvenience of wearing a bougie. Such a remedy is caustic, when judiciously used. Hitherto the lunar caustic has been chiefly employed for this purpose, and my former work upon this subject will show the high opinion I entertain of this remedy, in the various diseases in which it is employed. It has, however, been my good fortune, to discover a more efficacious, and, at the same time, a less painful and hazardous remedy for the disease in question. This valuable remedy is the kali purum, which, if used in the manner, and with the precautions shortly to be described, will be found of singular efficacy in removing the complaint. I have already had so much experience of it, and am so perfectly convinced of it's superiority over the lunar caustic, as well as over the common bougie, that I now use it in a considerable number of the cases that come under my care. Of it's safety I am as well convinced as of it's efficacy; for, if used with circumspection, experience shows there is little danger of it's producing any disagreeable effect.

"Before a caustic of any kind is applied to a diseased surface, care should be taken, that the state of the parts, and the habit of the patient, are such as to warrant it's application. In almost every instance in which it is applied with these precautions, the benefit expected to be derived from it will accrue, without any risk whatever, and with much less pain than might be expected from a remedy of this nature. But if, on the contrary, these precautions be not taken; if the caustic be applied while the parts are in a highly inflamed or irritable state, or tending to gangrene; if the habit be bad, and the patient very far advanced in years; we may expect the most mischievous effects from its application. Under such circumstances, the use of any kind of caustic, in strictures of the urethra, is dangerous in the extreme. By a little attention, however, it will be a very easy matter to distinguish the cases fit for the use of this remedy, from those which are not.

"If the patient be affected with fever, or any other acute disease; if he be much indisposed, indeed, from any cause; if, in particular, he have a gonorrhœa, attended with much inflammation and irritation in the urethra; if the prepuce, glans, or any part of the penis, or the parts adjoining to it be swelled and inflamed; if the urethra, and especially if the strictured part of it, be so irritable as not to bear the touch of a bougie, the use of caustic is, for the present, forbidden.

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forbidden. Great caution should likewise be observed in applying this remedy to those who are far advanced in years. There are, indeed, many elderly persons, who bear this remedy well; yet good reasons might be assigned, why age alone should make us cautious in applying caustic. But supposing none of these objections to exist, the application of caustic should not be the first act of the practitioner, on discovering a stricture in the urethra: some previous steps should be taken, in order to insure the benefit which it is capable of affording, and that without giving unnecessary pain, or producing the serious consequences which frequently follow it's injudicious application."

Mr. W. next explains the "previous steps," which he does at considerable length, and in which he shews great skill, address, and humanity.

He then proceeds with his improved method: "Having shown that this kali purum caustic ought not to be applied to strictures of the urethra, till a bougie of a proper size can be passed into the bladder; having likewise pointed out the methods to be taken previous to it's application in different cases of stricture; and enumerated certain cases and circumstances, under which this valuable remedy is interdicted, I proceed to state that mode of removing the complaint in question, which it is the particular object of this treatise to recommend. Our first business is to instruct the young practitioner how to arm a bougie with this caustic. For this purpose, put a small quantity of kali purum upon a piece of strong paper, and break it with a hammer into small pieces, about the size of large and small pin's heads. In doing this, care should be taken not to reduce it to powder. Thus broken, it should be kept for use in a vial, closed with a ground stopper. The bougie should have a proper degree of curvature given to it, by drawing it several times between the finger and thumb of the left hand.

"Before the caustic is inserted into it, it will be necessary to ascertain the exact distance of the stricture, to which the caustic is to be applied, from the extremity of the penis. For this purpose, let the bougie (which should be just large enough to enter the stricture with some degree of tightness) be passed, in a gentle manner, into the urethra; and when the point of it stops at the stricture, which it almost always does before it will enter it, make a notch with the finger nail, on the upper or curved portion of the bougie without the urethra, exactly half an inch from the extremity of the penis. When the bougie is withdrawn, a small hole, about the sixteenth part of an inch deep, should be made at the extremity of it's rounded end. A large blanket pin, two inches and a half in length, with the head struck off, will answer the purpose; the hole being made with the point of the pin. The extremity of the bougie should then be made perfectly smooth with the finger and thumb, taking care that in doing this the hole in its centre be not closed. Some of the broken caustic should then

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then be put upon a piece of writing paper, and a piece less than half the size of the smallest pin's head should be selected; the particle, indeed, cannot be too small for the first application. Let this be inserted into the hole of the bougie with a pocket knife, spatula, or some such instrument; and pushed down into it with the blunt end of the pin, so as to sink the caustic a very little below the margin of the hole. To prevent the kali from coming out, the hole should then be contracted a little with the finger, and the remaining vacancy in it be filled up with hog's lard. This last substance will prevent the caustic from acting on the sound part of the urethra, as the bougie passes to the stricture. Let the bougie be oiled, when it is completely prepared for the office it has to perform. Then let the operator, without delay, pass it by a very gentle motion, with the curvature upwards, to the anterior part of the stricture, upon which the caustic is to be applied. In doing this, the end of the bougie, that is held by the finger and thumb, should be a good deal inclined towards the abdomen, on its first introduction into the urethra, in order to preserve the curvature of the bougie. After it has passed about five inches, this end should be gradually brought downwards, as the bougie passes on, till it forms a right angle with the body. It will be known when the bougie arrives at the stricture, by the resistance to it's progress felt by the hand of the operator.

(To be continued.)

Account of Diseases in an Eastern District of London, from March 20, to April 20, 1804.

ACUTE DISEASES.		Fluor Albus	12
Peripneumonia	3	Amenorrhœa	10
Catarrhus	4	Dysuria	5
Enteritis	5	Dyspepsia	4
Rheumatismus Acutus	8	Vertigo	3
CHRONIC DISEASES.		Cephalæa	9
Tussis	15	Rheumatismus Chronicus	12
Tussis cum Dyspnœa	16	PUERPERAL DISEASES.	
Hæmoptoe	4	Dolores post Partum	6
Phthisis Pulmonalis	3	Ephemera	7
Pleurodynia	2	Menorrhagia Lochialis	5
Hydrothorax	3	INFANTILE DISEASES.	
Hæmorrhois	2	Herpes	4
Hernia	1	Convulsio	3
Ascites	4	Dentitio	4
Menorrhagia	7	Spina Bifida	1

During the last few weeks there has been a considerable variety in the temperature of the atmosphere. At one time, degree of heat was felt which is unusual at that season of

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of the year; but since that time the degree of cold has been as remarkably severe. The N. and N. E. winds have prevailed, and their influence has extended over both the vegetable and animal kingdoms. The spring is late, and it is feared that some of the earlier crops of vegetables have been much injured if not entirely destroyed.

The influence of this state of the atmosphere upon the human frame has been very considerable. The severe cold succeeding the unusual degree of warmth has been productive of several acute diseases. Pneumonic complaints have been severe, and affections of the bowels of the acute species have been frequent, and in several instances have terminated fatally.

MEDICAL AND PHYSICAL
INTELLIGENCE.

Mr. VAUQUELIN has communicated in a letter to Mr. Klaproth of Berlin, the discovery of a new metallic substance, which was found mixed with the platina sand. Being engaged in experiments on platina, M. Vauquelin, Fourcroy, and Descotels traced the new metal in the residuum, which remains after dissolving raw platina in nitro-muriatic acid, (aqua regia); it was found united with chromium and iron. The above mentioned residuum, which is equally insoluble in simple as well as compound acids, was treated with caustic kali, which, after ignition, was charged with acid of chromium, and the substance that remained insoluble had a dark green colour. On treating it with concentrated muriatic acid, it was for the most part dissolved; the solution appeared of a dark green colour. By thus continuing to treat the black residuum of platina alternately with kali and muriatic acid, they succeeded in entirely decomposing it, and separating it into chromium, iron, and the new metal. As far as it has hitherto been examined, it seems to be distinguished by the following properties.

1. Its solution in muriatic acid is generally green but sometimes blue, which depends on the proportion of the oxygen.

2. This blue or green solution, when heated to the seething point, is changed into a beautiful saturated red brown colour.

3. This colour disappears instantly by the addition of sulphat of iron, and the solution again becomes green.

4. Alkalis separate the oxyd from the green solution with a green colour, and from the brown solution with a brown colour.

5. The

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5. The oxyd is easily reduced without the addition of a combustible body, and the metal is white, almost like platina, and malleable.

6. From this metal, when oxydated to a certain degree which is not yet ascertained, the solution of platina acquires the property of being precipitated by sal ammonia with a red colour, because on adding to a solution of pure platina which is precipitated by sal ammonia pale green, a certain portion of the solution of the new metal, it will be precipitated with a beautiful red colour. This is likewise proved in the following manner: On pouring to a solution of the red triple salt of platina an equal quantity of caustic kali, a flaky green precipitate is formed, which is not the case in the pale yellow solution of that metal. It seems as if the common proceedings employed for the purification of platina, are insufficient to separate the new metal, as it was still found in considerable quantity in the platina metal purified by Mess. Jeanetty and Neker de Saussure, at Paris. Besides the iron, the chromium, and the new metal, the platina sand contains also the Titan metal.

Dr. KEUTSCH has found that friction with oil is highly useful in curing fevers which are peculiar to the West India islands. It produces strong perspiration, and checks the vomiting. In some cases the effect of friction is rendered more efficacious by adding camphor to the oil.

Mr. CARPUE will commence his Lectures on Anatomy and Surgery on Monday the 21st of May. Particulars may be known by applying to Mr. C. Leicester Square.

Dr. KIRBY has in the press, and will shortly publish at Edinburgh, a pocket volume containing Tables of the Materia Medica. The object of these Tables is to present a comprehensive view of the most essential circumstances respecting each article received by the three British Colleges. These are classed according to their effects, and of each are given the systematic and officinal names, native place, part used, usual form of exhibition, doses, officinal preparations, and the cases to which it is applicable. To each class is annexed a select number of formulæ, written in the new nomenclature adapted by the Edinburgh College in the late edition of their Pharmacopeia, and to the whole is subjoined a tabular view of the earthy, alkaline, and metallic salts employed in medicine, exhibiting their solubility in water, their composition, and the substances which decompose them by single and double affinity.

To CORRESPONDENTS.

Communications are received from Dr. Moodie, Mr. Scott, Mr. Stott, Perscrutator, and a Student of Pharmacy.

ERRATUM.

Page 331, l. 24, for *Barlow* read *Bartley*.

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THE

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CASE OF A WOMAN BITTEN BY A VIPER.

By JOHN MOODIE, M.D.

CATHARINE BISHOP, aged about 70 years, living at Kelston, four miles and a half from Bath; in the month of April, 1801, whilst gathering violets on a sunny bank, was twice bitten on the back of her hand by a viper. The first time, not having observed the serpent, and thinking she had only been pricked by a brier, having sucked the blood from the wound, she went on picking violets as before. The viper immediately after sprang at her, and pierced the large vein between the middle fingers of the right hand with its poisonous fangs, secured its hold for some time, and it was with difficulty she shook it off, and killed it on the spot with her foot.

The pain was at first extremely acute, and in less than half an hour this person was seized with faintness, sickness at stomach, and vomiting. In this situation she was found by some neighbours, who carried her home, and gave what assistance they could. Towards the evening the wound became livid, the arm was much enlarged, and the skin had a yellowish hue. The infection soon after reached her throat, deglutition was greatly impeded, and she was very restless during the night.

The viper, which had been carried home, was broiled, and the part bitten anointed with its fat, but without giving the smallest relief to the patient. It would, indeed, be a desirable circumstance, if the same animal that produced the poison, should also afford an antidote to destroy its effects. Unfortunately, however, we have not hitherto had any clear proof of the truth of this popular opinion, upon which we can with certainty place our reliance.

The symptoms becoming more alarming, attended with inflammation and fever, the woman was visited about the close of the evening by a neighbouring apothecary, who

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thought that little could be done, he therefore only ordered some olive oil to be given internally, and applied to the wound, with fomentations to the arm, and the body to be kept open; but still the patient received no benefit.

On the morning of the second day, the swelling encompassed her whole breast, and even extended to the bottom of the true ribs, respiration was extremely difficult, the pulse low, quick, and interrupted.

The third day, she appeared in great danger, the swelling having extended over the lower part of the abdomen, and her body was considerably increased beyond its natural size; breathing short and laborious, and her speech was inarticulate.

In this situation the apothecary again saw the patient, but recommended nothing farther, as he supposed that no chance of her recovery remained; the miserable sufferer had not slept for forty-eight hours.

I was now consulted by a relation of this woman, whom I informed that there was no doubt of recovery, if she could swallow the medicine intended to be administered to her; and the person having promised to attend punctually to my directions, I ordered two ounces of *aqua kali puri, olim lixivium saponarium*, a tea spoon full to be taken immediately, in about two ounces of water, or any other convenient vehicle, and repeated every three or four hours, till the patient found relief, and afterwards at longer intervals. The *linimentum ammoniæ fortius* was also directed to be applied to the wound, and frequently to the external parts principally affected.

In less than an hour after the lixivium had been administered, the patient appeared much relieved, the swelling gradually decreased, respiration was less obstructed, and she was more composed. A tea spoonfull of the medicine was then repeated every six hours, and the happy result was, that in three or four days from the first taking the lixivium, she was perfectly restored to health, and a week after came to Bath to return thanks for my advice, and the same day returned to Kelston on foot. At that time she had no pain or uneasiness whatever remaining, except a slight degree of hardness round the edges of the wound. On examination of the part bitten, I could discover the marks of four fangs, two on each side; and from the distance they were asunder, I should have supposed it to have been a large viper.

While employed in the medical department with the king's forces in the East Indies, from 1781 to 1788, my professional

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professional situation with the army gave me frequent opportunities of observing the symptoms peculiar to, as well as the various means at that time recommended by authors, and generally adopted, in order to afford relief to persons unfortunately bitten by venomous snakes.

The medical practitioners of the French, and other European nations, who had settlements in India, were in the habit of giving arsenic, in the form in which that dangerous medicine had been long administered, and too often with fatal effects by the natives of the country. The volatile alkali has been much depended upon by some, as a specific against the poison of the viper. Many years ago it was brought into general practice by the recommendation of M. de Jussieu, and in several instances is known to have been sufficiently efficacious, by stimulating the fibres and preserving that irritability which the effects of the poison tend to destroy.

The surgeon-major to the French forces on the coast of Coromandel informed me, that he had not employed the volatile alkali, or the lunar caustic, in resisting the disorder occasioned by the poison of serpents; but that he had generally ordered from twelve to sixty drops of the *spiritus volatilis succinatus*, long known by the name of *eau de luce*, with considerable success internally, and applied to the wounds of persons bitten. That during the campaign of 1782, he had twelve patients attacked with the cramp, all of whom he cured by the *spiritus salis ammoniaci cum calce*, or caustic volatile alkali. When the disorder fell under his care, he gave ten or twelve drops of this medicine in half a glass of water; soon after which a perspiration broke out; this he kept up by a decoction of cinnamon or sage, of which he ordered the patient to drink plentifully, keeping him to a strict regimen. The next day the patient was generally easy, and frequently cured; if the first dose did not operate, he gave a second or third, in the same manner.

Spasmodic diseases endemial to hot countries, are not only prevalent at particular seasons, but are the most fatal disorders to which Europeans are subject after their arrival in India; and exceed all of the kind ever known in cold climates, in the suddenness of their attack, extreme violence, the painful symptoms which they produce, their duration, and finally, if not speedily relieved by medical assistance, by their fatal termination.

In the cure of this complaint from the authority above mentioned, I was induced to make trial of the volatile

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alkali, and generally with success, but given in much larger doses than those recommended by the French surgeon. I have, however, always found the most beneficial effects from the warm bath, a liberal use of opium in a liquid form, joined with a strong and active cordial, in small quantities, and frequently repeated.

The volatile alkali, acting as a powerful stimulus, is often prescribed in diseases where the pulse is languid, and the patient in danger of sinking; it is also of great utility in promoting the secretions, especially by the skin. And it seems principally owing to this, and their stimulating quality, that those salts have acquired the reputation of being specific remedies against the bad effects of the bites of serpents, and other noxious animals.

In what manner the poison of the serpent occasions such dreadful symptoms, and sudden death upon animal bodies, is a circumstance which remains to this hour involved in obscurity and doubt. It is, however, an important fact, and known to ancient writers, (though contrary to the authority of Dr. Mead) "that the venom of serpents produced its effects in consequence of a wound, and thro' the medium of the blood."

It has also been a general opinion, that the bite of the viper, and other noxious serpents, will sometimes occasion jaundice. This effect, says Dr. Mead,* is owing to spasms obstructing the biliary ducts, in the same manner as colic pains produce this disorder. But, it may be doubted, whether colic pains ever produce jaundice of themselves, without the assistance of *calculi*, or other exciting causes obstructing the biliary passages. Dr. Simson† observes, from several experiments, that jaundice in this case arises from the operation of the poison acting immediately on the blood, and producing such a change in it, without causing any obstruction in the ducts, or any regurgitation of bile from the liver.

Fernelius‡ appears to have had the same notion of it, when, speaking of *Viperæ demorsum aut epotum venenum*, as causes which bring on jaundice, says, *Quorum vi sanguis totus pristinam amittet puritatem, et in citrinum ac biliosum humorem corrumpitur, qui omnia pervadens cutem inficit atque labefactat.*

The

* Treatise on Poisons.

† See his Essay on the Jaundice, Med. Essays and Obs. vol. 1, edit. 4.

‡ Patholog. lib. vi. cap. 8.

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The Abbé Fontana* has clearly demonstrated, from a variety of experiments on different animals, that the venom of the viper is perfectly innocent when applied to the nerves only; that it produces in them no sensible change, and that they are incapable of conveying the poison to the animal. On the other hand, he has shewn, that it acts immediately on the blood, and that, through the medium of the circulation, it destroys the irritability of the muscular fibres, and thereby occasions death.

Upon this view of the subject, it would not indeed seem difficult to comprehend in what manner the peculiar quality of the venom acts, so as to cause sudden death. It has been confidently reported by Fontana, and other naturalists that no instance of the bite of a viper proving fatal in Europe, can be ascertained; a happy circumstance were this true. If in Europe, at certain seasons, the poison of the viper should happen to be immediately thrown into a large vein running on the surface of the body, and the animal be of a size, so as to introduce a sufficient quantity of venom, (as occurred in the case of the woman now described) it will be rapidly carried to the vital parts; and even in the human body, may render the use of the most powerful medicines ineffectual.

It is, however, pleasing to reflect, that, of the many serpents supposed to be venomous, few are really so; and even these do not, in every instance, inflict a fatal wound. And though death sometimes happens from the bites of the European viper, as well as the Indian serpents, yet, recovery from the wounds of those supposed to be most poisonous is not uncommon.

The distinction between poisonous and innocuous serpents was long ago described by Dr. Gray, in the Philosophical Transactions for 1789, vol. lxxix; where he says, that he had examined one hundred and fifty-four species of serpents, of which number twenty-six only appeared to be venomous.

The effects produced by the bite of a viper, or other noxious animals, are so alarming and fatal, that we cannot wonder to find they have excited the attention of the most eminent physicians in all ages, to investigate the cause, and find out a powerful remedy for so dreadful an evil. But it would be endless to enumerate the various medicines which from remote antiquity, have been successively

* See Fontana, Traite sur le Venin de la Vipere.

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imposed upon the credulity of mankind, as specifics against the poison of serpents.

Arsenic has been long used by the natives of India, as a principal ingredient in the celebrated Tanjore pill; the composition of which is, white arsenic, pepper, quicksilver, the roots of velli-navi, (a poisonous vegetable peculiar to the Malabar coast) the roots of the neri-visham, and the kernels of nervalam, both drastic purgatives. The quicksilver being rubbed down in a mortar, with the juice of wild cotton, till the globules entirely disappear, and the other ingredients carefully powdered, the whole is beaten up into a mass for pills with the above juice.

I cannot help looking upon arsenic as a dangerous remedy, even when administered with every caution possible; and although it may be well adapted to counteract the effects of the poison, yet, as it often produces dangerous symptoms, and if used with freedom might occasion death, I was therefore deterred from ordering it.

Although many years have elapsed since Fontana published his experiments, respecting the internal use of the *lunar caustic*, now called *argentum nitratum*; yet, notwithstanding the advantage said to have arisen from this preparation of silver in the *nitric acid*, it is surprising that it has not hitherto excited more general attention. The *argentum nitratum* may be taken two or three times in the day, in the quantity of half a grain dissolved in two ounces of distilled or rain water, (otherwise the caustic will be in part decomposed, which will be evident by the white cloud forming in the solution); its use may be continued for several days with the greatest safety. The effects it produces, are generally heat in the stomach and breast, and after a time, tenderness in the gums, with a disposition to bleed, but without that swelling and pain attending the use of the oxyds of mercury.

Fontana mixed the poison with the lunar caustic, which he applied to a wound, and found that the venom was rendered perfectly innocent, while the corroding power of the caustic was diminished. He wounded a variety of animals with poisonous teeth, scarified the wounds, and washed them with a solution of the same caustic in water; by which means the lives of the greater number of animals were saved, though he knew they were such as were most easily to be killed by the poison, and the death of others was retarded. He in like manner tried a weak solution of the same medicine internally with great success; hence he congratulates himself in seeing his labours at length

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length rewarded by the discovery of a true specific remedy for the bite of the serpent.

From the above account, we should have imagined the lunar caustic to be capable of curing every case of this kind, in which it was administered; but I am sorry to say, that after repeated trials made in several cases, I did not find it deserved the praises bestowed upon it by Fontana; and many practitioners have assured me, that they have been greatly disappointed in their expectation of its powers. And there are instances of *rabies canina*, terminating fatally after the use of the lunar caustic, and salivation by mercury. Although the utility of the several methods have not yet been fully established, there is reason to hope, from the spirit of investigation which now prevails, that some solid advantage will at length be derived for the benefit of the public.

When persons are unfortunately bitten by animals whose venom is highly deleterious, it is the duty of the practitioner to stop the progress of the disorder as speedily as possible; and this can only be done by a medicine, the operation of which is quick and effective. In various cases which came under my own direction, five of whom were bitten by the *cobra de capello*, the *cerastes*, and other serpents known to be highly poisonous, four recovered by the use of the lixivium saponarium.

When called to the patient immediately after the accident, my first attention was to apply a ligature* between the part bitten and the heart, to prevent the poison from diffusing itself over the body by means of the returning venous blood. With respect to medicines, I gave the preference to the lixivium saponarium, or the caustic volatile alkali, either of which, if timely administered, has been found sufficient to obviate the dangerous tendency of the poison. Of the above medicines, I ordered sixty or seventy drops, to an adult, in about two ounces of water, which was repeated every three or four hours, till the patient was relieved.†

Whatever may be the nature of the poison of the ser-

* Though the use of the ligature has been considered by Fontana of no utility; yet, in compliance with custom, if this practice can give the patient a chance of recovery, it ought not to be neglected.

† An experienced practitioner will observe that mercury, the nitric acid bath, and many of the most powerful articles of the Materia Medica, are still left untried; but whatever measures are used under such circumstances, they must be prompt and efficacious,

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pent, or of the *modus operandi medicaminum*, we know that the two fixed alkaline salts unite readily with acids, and change them into a mild neutral. Hence, if by accident or otherwise, any of the strong mineral acids should fall on any part of the human body and begin to corrode and give pain, the immediate application of the *aqua kali*, or a solution of any of these alkaline salts, will destroy the causticity of the mineral acids and prevent them from doing farther mischief. Or if any person should accidentally swallow any of the mineral acids, or hydrargyrus muriatus, or any other corroding salt, which an alkali will decompose, a speedy exhibition of a solution of the alkaline salts, in proper doses, afford the most likely means of relief and of preventing fatal effects.

On the Epidemic Catarrh *commonly termed* Influenza.

By John Moodie, M.D.

Much has already been written on this disorder; however, the following observations, although the result of my own reflections on the subject, are not therefore offered to the public in support of any particular theory; considering it a duty incumbent upon every medical practitioner to contribute to the utmost of his power to the stock of general information. Having recently seen several cases of well marked influenza in this city, some distinct, others more or less complicated with the prevailing complaints of the season; in order to ascertain how nearly the symptoms resembled those of the last year, I attentively observed the progress and termination of the disorder, especially when unaccompanied with other diseases, and found no material difference, nor was any other method of treatment necessary.

Through the medium of the public prints, the community at large were for some time much alarmed by an apprehension of this epidemic; and the unfavorable impression tending to remove confidence from the mind, occasioned a despondency, which, if any contagion really existed, must have been conducive to its more extensive dissemination. Hence, among the lower orders of society, the dread of infection operating to the disadvantage of the afflicted, the offices of the friend, and of the nurse, may have been with-held from an ill grounded fear of danger.

On

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On the public mind, the first impression is too often the strongest, and the most lasting. To do away that impression before it shall sink too deep, is the laudable intention of the following remarks, which, after what has been said by others on the subject, may be found in a great measure unnecessary. Yet they may tend to shew, that notwithstanding what has hitherto been asserted respecting the nature and cause of this disorder, nothing conclusive has been advanced by any writer in favour of contagion. The great questions are well known to consist in, whether the epidemic be contagious? and whether it be an imported disease?

The variety of opinions prevailing among speculative men, in what relates to the origin and cure of the late epidemic catarrh, commonly termed Influenza, as well as to what regards the origin and cure of the plague, and some other diseases, is a convincing proof of the fallibility of the human mind. The subject of physic is attended with so many difficulties, that we frequently depend upon conjecture rather than certain facts; and this will always be the case in every science where so little can be decided by demonstration and actual experiments, and where the rest depends upon the caprice of our reasoning faculties, which are often insensibly perverted by the early prejudices of education and other causes. Things thus seen through various mediums, must necessarily strike our senses very differently, though in their nature they are essentially the same.

Observations, therefore, founded upon experience are the surest guide to truth in every science; and when applied to the prevention and cure of diseases, are alone more likely to succeed than the most refined and plausible theories where these are disregarded and set aside.

In the profession of Physic, where the practitioners are considered as the guardians of health, the community at large have a claim upon their exertions; hence moral duty should stimulate them to offer every information that may tend to universal good. It is beneath the dignity of a physician to consider himself the object of his own attention; he should deal out his bounty with a liberal hand, and let his discoveries be diffusive.

It appears from the description of epidemic diseases transmitted to us by eminent physicians, that a disorder resembling that which we now term *influenza* prevailed at different periods in various parts of the world, from 1510 to the present time. And although the diseases which form

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form the prevailing epidemic may not have formerly assumed the characteristic symptoms which they have lately done; yet this is probably owing to particular circumstances, arising chiefly from the temperature of the seasons when they prevailed. It is, however, remarkable, that during the last century, when the plague so frequently visited England, the influenza appeared only once, viz. in 1657; whereas it has prevailed among us no less than seven times in the space of nearly eighty years.

Sir John Pringle was of opinion, that the sensible qualities of the atmosphere had no effect in producing the epidemic disease prevalent in London, and almost the whole kingdom, in the autumn of 1775. He also thinks that such diseases do not depend upon any principles with which we are acquainted; but upon some others, to be investigated by the united enquiries of scientific men.

However, if I may be permitted, from my own observation, to form any reasonable conclusions, I cannot but attribute the proximate cause of the epidemic catarrh, which appeared in the latter end of 1792, to the uncommonly hot, moist, and heavy temperature of the atmosphere, during the summer of that year. For it is a fact well known, that the vicissitudes of heat and moisture are extremely injurious to the human frame, especially when they rapidly succeed each other. Hence the great unwholesomeness of sudden calms, or heavy rains, after long droughts; and of sudden thaw after severe frosts. It is thus that the constitution of the atmosphere, which cannot be doubted, considering its great influence on valetudinary habits, shews itself; by which the human body is more or less disposed to diseases in general at one time than another, but particularly colds, the small-pox, epidemic dysentery, and ulcerated sore throat; whence diseases of the putrid kind not only become more frequent, but also more fatal, and are known to prevail with greater violence, as the air changes from a healthy to a malignant state.

The great plague in London, in the year 1636, which lasted twelve years, was more or less fatal at different periods. In eight years, one with another, two thousand people died yearly, and never less than eight hundred in one year; which shews that contagion and its mortal effects, depended as much upon the atmosphere as the disease itself. This circumstance is still more clearly proved, by the great disproportion of deaths in different weeks; the number in one week increasing from one hundred and

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eighteen to nine hundred and twenty-seven in the next; and in another, decreasing from nine hundred and ninety-three to two hundred and fifty-eight; and from that number again increasing, the next week, to eight hundred and fifty-two.*

In what manner diseases are occasioned or influenced by the obvious qualities of the air, is difficult to determine; notwithstanding all that has been said on its gravity and lightness, effects of heat and cold, moisture and dryness, or the winds blowing from particular quarters at certain seasons, with different degrees of violence; seeing that very sudden changes of weather from one extreme to another, frequently happen without producing any diseases of a malignant or epidemic nature.

Dr. Mead remarks, that contagion is propagated by three causes, the air, diseased persons, and goods transported from infected places.

Ancient authors, who lived in countries more exposed to these calamities than our own, observed the constitution of the atmosphere, which preceded pestilential fevers, to be great heats, attended with much rain and southerly winds; and it is an opinion as old as *Hippocrates*, corroborated by almost every subsequent writer who has treated on the subject, that no other than a hot and moist temperature of the air brings on the plague; and that the duration of this constitution is the measure of the violence of the distemper.

Whatever the temperature of the seasons in this quarter of the globe might have been a century ago, it is evident that the climate of England, and perhaps of other parts of the world, has undergone a very considerable alteration during the last thirty years, and is now become more changeable, moist and cold, than before.

The epidemic diseases which have at former periods, and recently prevailed in this country, may therefore be referred to the Spring and Autumn, when the particular state of the air has been unusually hot and moist, and subject to sudden changes. Hence the effusion of a general existing cause, rendering diseases epidemical, though not infectious, from one person to another, yet existing where we may be said to be living in an atmosphere more or less impregnated with contagion, according to the locality of the situation.

We

* Grant on the Bills of Mortality.

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We have therefore every reason to suppose, that the prevailing complaints have arisen from the sudden changes of the weather which have lately taken place. From hence it would seem, that the infection must depend upon some powerful operating principle, by which means certain noxious effluvia are absorbed from the air into the system generally acting as a morbid cause.

But whether the disorder is, or is not contagious, is a fact which, perhaps, still remains to be ascertained, and sanctioned by the most respectable authority.—Nevertheless, it is certain that whole families in this city, as well as in various and remote parts of the country, have, on the same day, been indiscriminately seized with the complaint, where there had not been any previous communication with those already affected. Neither were the medical attendants, nor others, in any respect liable to infection. During the prevalence of the disease, I knew persons who came hither from different parts of the kingdom, with a view (as they said) to avoid the disorder, but actually brought it with them, which was not to my knowledge, communicated to others who resided in the same house.

Catarrhal affections, which may be properly termed well-marked influenza, as far as my practice and information extended, first made their appearance in this city and neighbourhood about the beginning of November, 1802, and did not entirely disappear until near the middle of June. About this time, I was desired to visit a child a year and a half old, who had hitherto enjoyed good health, but died of the catarrhus after a short illness, unaccompanied with any other species of the epidemic.

Bath, April 10, 1804.

[To be continued.]

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I HAVE for some time intended to give you an account of the efficacy of arsenic, internally administered in chronic rheumatism; a disease which it has never before, to the best of my knowledge, been employed to relieve; and I have only been waiting for more experience, to justify my recommendation of it. Having in the course of last summer,

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summer, unsuccessfully exhausted the common list of anti-rheumatic remedies (warm bath, various liniments, antimony, Dover's powder, bark, mercury, opium, guaiacum and ammonia, in several forms and combinations; mustard seed, horse-raddish, &c. &c.) in the case of a friend of mine, who was every day becoming a greater martyr to that tormenting complaint, some analogies and reasonings, which will probably appear very loose to many of your readers, and particularly to those who do not know how casually medical discoveries are often brought to light, led me to the use of this medicine: I will slightly advert to them before I proceed.

1. Most of the common anti-rheumatic remedies; for instance, warm bathing, antimony, guaiacum, mercury, bardana, are employed in cutaneous diseases: arsenic too, is sometimes so employed.

2. Arsenic cures certain intermitting paroxysms and pains, as ague, and head-ache: the pains of rheumatism have their periodical aggravations.

3. Arsenic is a powerful tonic, and chronic rheumatism is a disease of debility.

The sufferings of my patient, a young man of twenty-six, were altogether confined to his chest and loins for several months; he was during this time nearly free from pain in the day, but the nightly paroxysms kept increasing in violence. His limbs at length became generally affected, and one of his knuckles much enlarged; he was now never easy upon motion, and at last got almost unable to leave his room. His appetite and strength were much impaired, and having before tried such a variety of remedies, he despaired of his situation, and began to set himself down as a cripple for life. He had, moreover, been troubled for some years with a pretty general eruption of the herpetic kind, which first appeared after a course of mercury, and which at times was very virulent. Under these circumstances it was, that I recommended to him the use of Fowler's mineral solution: he began, as is usual, by taking four drops in water, three times a day, which he gradually increased to three, and finally to four times the number; a quantity which few persons can bear, ten or twelve drops being commonly sufficient. In two or three weeks, without the aid of any other remedy, he was considerably relieved, and by a perseverance of two months in the course, was, and still remains, perfectly cured, both of rheumatism and herpes. He began with the solution in October, and consequently recovered under all the disadvantages

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disadvantages of wet, cold, and changeable weather. As he was completely tired of nauseous medicines before, the tastelessness of this was a great recommendation with him, as it must be with others, and contributed very much to his steadiness in its use. I have since had the satisfaction of relieving other rheumatic patients by the same means, after the failure of the usual remedies; and Mr. Hardman (the gentleman who lately gave you an account of his success with the cupping glass, in a case of abscess) informs me, that a lady under his care has lately been relieved from the most violent pains of the kind, which had set the best of the old remedies at defiance for thirteen or fourteen months, by the use of the mineral solution alone. The disease began, in this case, to yield to it in three or four days; she still continues the medicine, and has lately walked three or four miles at a time, after having been unable to move about her own house with comfort for several months. In this case too, as in the others, enlargements of the joints have subsided, and I have no doubt from what I have seen, that this remedy, employed with proper discrimination and care, will be found worthy to supersede many others, and to afford more relief than has commonly been afforded in the worst cases of chronic rheumatism. I must be allowed to make two or three remarks before I conclude.

It will be thought by some, that the cutaneous disease led me to the use of the arsenic in the first case. I should not deem such a remark of any great consequence, if it were urged; but I will just assure you that it never occured to me, in the first instance, to direct my attention to the removal of an eruption, which length of time had rendered familiar, and to the disappearance of which every subsequent illness might have been ascribed, as is occasionally done; and that this circumstance added but little to my previous determination to employ that solution on account of the rheumatism, though its double effect has certainly much increased the pleasure of the cure. Lest the union of two complaints in this case may lead to some suspicion of the pain differing in any respect from rheumatic pain in general, it may be worth while to observe, that in the other cases there was nothing of the kind.

Cases of chronic rheumatism, in which the usual remedies have failed, and in which the arsenic may be improper, will no doubt occur; but with your readers, I conceive particular references are quite unnecessary: most gentlemen

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gentlemen of the profession are fully competent to form their own judgments. For the same reason, it may be superfluous to hint, that a few drops of laudanum will be occasionally required, to make the solution sit easy with delicate persons, and that a gentle laxative, in case of costiveness during its use, should not be forgotten. Henceforth, perhaps, it may be right to give the solution a trial, for reasons obvious to your readers, in some tedious arthritic cases; and likewise in the wandering pains and anomalous ailments of those syphilitic patients, who have sustained permanent injury both from the disease and its cure. It would be easy to extend the prospect still farther, but let us first cultivate the ground we have gained.

A professional gentleman, to whom I mentioned part of the facts here detailed, gave it as his opinion, that the arsenic owed its success in rheumatism *entirely* to its tonic powers. Undoubtedly it would not have so succeeded, if its powers had been of an opposite kind; but it is not the property of tonics in general, *directly* to relieve rheumatic pains, and reduce rheumatic enlargements; nor can we attribute to its tonic powers its alleged anodyne properties in some cancerous cases. Besides, the pain in all the patients alluded to in this letter, has yielded to it before the strength was perceptibly, or could be materially improved, insomuch, that the strength may as well be called the consequence of the ease as the reverse. That arsenic has a local, in addition to a general effect, is evident from the itching and partial discolorations so often attendant upon its use; and it is certainly to its peculiar action upon the superficial circulation, that we must ascribe much of its efficacy in cutaneous complaints, if not its other qualities However, I am by no means inclined to be uneasy about its modus operandi, I am only anxious about the matter of fact; and I hope, on that account, that your Correspondents will turn their attention to the subject without delay: I have much deceived myself, if it be not very well worth their while.

I wish most sincerely I may soon have more success to communicate: in the mean time, I shall be particularly obliged to any gentleman who publishes an account of impartial trials made with this medicine, be the event what it may.

I am, &c.

JOHN JENKINSON.

Manchester, May 21, 1804.

To

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE propriety of the practice of bringing on premature labour at the seventh month, in such cases of distortion of the pelvis, as had, or might require the use of the crotchet, is now so well established, that perhaps an apology may be deemed necessary for again obtruding the subject on your reader's attention; but as the matter is in itself important, and the case I have to offer is conclusive, I shall close my communications regarding it, with the following narrative.

Mrs. M. about twenty-eight years of age, had been twice delivered by the crotchet, at the full time, by a gentleman much employed in midwifery practice, owing to a contraction of the pelvis, which hindered the birth of a full grown fœtus. In her third pregnancy she applied to me, from hearing of my success in similar instances, by bringing on premature delivery. I advised her to submit herself to my directions, and to let me know about the end of the seventh month. She obeyed my injunctions, and I used the proper means for hastening delivery, ordering her at the same time an anodyne mixture to take occasionally, and in which she believed the efficacy of my method to consist. On the fifth day from the rupturing of the membranes the child was born alive, and is now nearly three weeks old, improving daily in strength. The labour was lingering for about forty hours, but not at all strong till within a quarter of an hour before the birth, otherwise nothing remarkable occurred, and she thought herself better the day after than she had formerly done at the end of a week.

Here the child's life was certainly preserved, as well as the sufferings of the mother reduced to nothing comparatively, not to mention her entire safety, an object that may very justly claim the first consideration in every case.

I am, &c.

E. HARDMAN.

Manchester, May 8, 1804.

To

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

A Method of combining antimony and muriatic acid, by a double exchange in the dry way, by distilling a mixture of sulphurated antimony and corrosive sublimate, has been long known in chemistry, and the salt, resulting from this combination, has been named butter of antimony. Who was the author of this capital discovery, it is unknown to me, or, otherwise, I would do him the honour to acknowledge it; as it would shew him, whoever he was, to have been a chemist, at least, not inferior to some of those of modern times. There are, however, slight grounds to believe that it was known before the age in which Van Helmont lived. This author affirms that the alcahest of Paracelsus rendered metals distillable by the retort, and restored them again without alteration of their specific gravities; and, whether this may have any allusion to the distillation of butter of antimony, I leave it to the adepts to determine. The distillation of this butter of antimony is not attended with any visible discharge of noxious fumes, and may be conducted in the middle of a laboratory, in unluted vessels, without being offensive to the spectators, and with safety to the operator, if he only take care to tie a piece of cloth, or paper, round the upper part and neck of the retort, to retain the heat, and prevent the butter from congealing, and blocking up the nose of the retort, and exploding the vessels, till it drop down into the receiver. The butter, as it is called, when allowed to remain in an open vessel, exposed to a moist air, between three and five months, deliquesces into a clear liquid like water. In like manner, if the icy butter of antimony be distilled from a clean glass retort into a dry receiver, three times over, it becomes the liquid oil of antimony of the chemists. If the liquid oil, prepared in either of these ways, be dropt into water, a milkiness is immediately produced, and a white powder precipitates to the bottom of the vessel, which was called by the chemists, the angelic powder, the powder of algeroth, the mercury of life, &c. Within the last thirty years, Mr. Scheele, a German chemist, residing in Sweden, found that this powder dissolved readily in a solution of cream of tartar, at a boiling heat, and on evaporation furnished an excellent salt of antimony, greatly superior to the common tartar emetic which

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had heretofore been in use among the chemists, and was always adulterated with heterogeneous salts. In order to save the great quantity of corrosive sublimate employed in preparing this powder, Mr. Scheele was induced to make trials, and actually did discover a method of preparing butter of antimony, viâ humidâ, without assistance of corrosive sublimate. As his process is conducted in an open digesting vessel, and gives out little fumes, it is perfectly safe to the operator, and as I have frequently tried it, and have always obtained more pulvis algerothi than half the weight of the antimony employed, I subscribe to the truth of it, always willing to give praise to whom praise is due.

Of late years, however, the Colleges of Physicians of Edinburgh, London, and Dublin, pretending, I suppose, to improve on Mr. Scheele's process, have published, in their Pharmacopœias, a process for muriat of antimony, which did not succeed with me; nor do I believe that ever it has succeeded, or ever will succeed, with any man, in its present form, for reasons to be presently mentioned. I have not learnt with certainty, whence this process originated. Certain, however, it is, that it has had a place for ten years in the Pharmacopœia of the Edinburgh College; and has, last year, been copied into the last edition of their Pharmacopœia; which circumstance renders it probable, that they have not seen their error during that time, and also that they have had no communication with the practical chemist; for, I doubt not, that many chemists, in this island, could have told them of their error, if they had been willing to hear it. From a circumstance which fell under my observation, I question whether they would listen to any representation on the subject, much less thank any one for his communication. Till I saw it again honoured with a place in the Edinburgh Pharmacopœia, and Dispensatory, I surely thought their process was long ago exploded; and I think I may safely advance, that if the Colleges had been under necessity of preparing the powder of algeroth for the use of their patients, or in the way of the practical chemist, it never could have had a place in any Pharmacopœia. The Editor of the Edinburgh Dispensatory, in 1794, has given this mode of preparing muriat of antimony a preference to every other mode of preparing it, although he has been guarded enough not to point out wherein its superior excellency consists; but the Editor of the same work in 1803, has written of it with more reserve.

Having

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Having thus observed, that the error was become general, and might be a means of misleading the young chemist, and of damping his juvenile ardour, at the loss of his vessels and materials, and might in this way tend to retard the progress of chemistry, I thought it proper to communicate the result of my experiments to the public, though perhaps, I may be little attended to in a question between me and three Collegiate bodies of Philosophers.

The oxyd of antimony with sulphur, by nitrat of potash, as the Edinburgh College is pleased to call it, which is a preliminary step to the distillation of muriat of antimony, is prepared by deflagrating in a red hot crucible, equal weights of sulphurated antimony and of nitrat of potash, thoroughly mixed and dried. The oxyd thus obtained is to be pounded and washed repeatedly with boiling water, and dried. A pound of sulphuric acid, which is not seven ounce measures, is next to be put into a retort, and afterwards there is to be added, by degrees, one pound of the above oxyd of antimony, previously mixed with two pounds of the dried muriat of soda. This mixture is to be distilled in a sand bath, the distilled matter is to be exposed to the air for several days to relent or deliquesce into a liquid, and the fluid part poured off from the dregs. Now, let facts speak for themselves. I proceed to the experiments.

Feb. 20, 1797, Having prepared oxyd of antimony, with equal weights of nitrat of potash and of antimony, I washed it with boiling water repeatedly, then dried it, and found that two pounds and a half, from the crucible, lost one pound by this treatment. The oxyd was now of a dark red or brown liver colour. Twenty-four ounces of it, mixed with an equal weight of dried muriat of soda, were put into a large retort. Nearly sixteen ounces of sulphuric acid were next poured upon this mixture, and the retort set into a sand-bath. No sooner did the sulphuric acid touch this mixture, than the muriatic acid began to pass away copiously, in white suffocating incondensible vapours, and with a smell of sulphurated hydrogen gas (a liver of sulphur smell.) A capacious receiver was applied, with a hole in the side for applying a syphon, at which, during the distillation, the muriatic acid carrying some little oxyd of antimony along with it, passed away in a continued stream, and contaminated the laboratory so much, that no person could stay in it, notwithstanding a draught of air through it. The phenomena were such that I durst not lute the vessels completely for fear of explo-

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sion; and indeed this seemed the less necessary, since in the old process for muriat of antimony by muriat of quicksilver, no luting is required. This was one of the most intolerably suffocating operations I ever performed. After the mixture distilled to dryness, on lifting out the retort, I observed that the sulphuric acid, for want of fluidity, as we may say, had not penetrated the half of the mass, and much of the oxyd lay unchanged, but compacted into a firm lump which could not be dissolved, or be got out without breaking the retort. A thin crust was collected about the neck of the retort, of a deep yellow colour, which did not liquefy by heat, like muriat of antimony, nor could it be got off, in any other way, to be of use. It extended downwards to nearly the surface of the residue. After all, the quantity of muriat of antimony, if such it might be called, obtained in the receiver, both in a fluid form, and sticking to the sides of it, in form of a yellow crust, not liquefiable by heat, was a mere trifle. After precipitating it with water and washing it thoroughly, I obtained twelve drachms and thirty-six grains of powder of algeroth, out of twenty-four ounces of red oxyd of antimony, which I began with; which is little more than one ounce out of sixteen ounces, and not an eighth part of what could have been got by Mr. Scheele's process. But it is to be observed, that the yellowish crust on the receiver, could not be completely washed off, but still left a yellow stain. The mass was afterwards pounded and treated with muriat of soda and sulphuric acid, via humida, and this repeated, by which I obtained more muriat of antimony; but still a great quantity of black matter remained, which was sulphurated antimony unchanged. It seemed to be about a pound, but I did not weigh it, and was further insoluble in muriatic acid. The first observation that naturally occurs to one on perusing the account of my experiment, is, that I have inverted the order of proceeding, recommended by the Colleges, in adding the sulphuric acid to the dry materials; whereas, they order the dry materials to be added, by degrees, to the sulphuric acid. To this I answer, the method of proceeding, ordered by the Colleges, is evidently copied from Mr. Scheele's process, where the operation is conducted in an open digesting vessel; the diluted sulphuric acid is first allowed to dissolve the sulphat of potash, and combine with the oxyd, and afterwards quits it, when the muriat of soda is presented, in consequence of a double exchange; the sulphuric acid combining with the soda, and

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the muriatic acid with the oxyd of antimony. But here, as the process is done in a retort, the dry materials cannot be added, by degrees, to the sulphuric acid, without some of them sticking to the neck of the retort, (unless done in a tubulary one) and besides, after the addition, the fumes issue out so copiously that the operator is obliged to look to his own personal safety; to add the whole as quick as possible, and run. In the second place, I used only an equal quantity of muriat of soda and of oxyd of antimony, although the Colleges order a double quantity of the former; but this I had previously found, from trials in Mr. Scheele's way, to be sufficient to dissolve the whole of the oxyd in an equal weight of crocus of antimony. Thirdly, I used rather a larger proportion of sulphuric acid, in order if possible to save my retort, but in vain. And here I think it worthy remark, that the Colleges certainly had not foreseen that twelve ounces of sulphuric acid, which are not equal to seven ounce measures, were not sufficient to wet even the half of one pound of oxyd of antimony and two pounds of dried muriat of soda, and, therefore, that it was impossible that the necessary combinations could take place, even if the materials had been in a proper state for it. The fourth observation I shall make on this process, is, that the muriat of antimony is supposed to be in a solid form, like butter of antimony of the chemists, since it is to be exposed to the air for several days to attract humidity, and dissolve into a liquid; and, even this circumstance shews that the Colleges have never tried their process, for in my experiment the small quantity of muriat of antimony obtained, was in a fluid form, and that only in consequence of the small quantity of water in the sulphuric acid. Finally, the Colleges have not made any provision for the condensation of the loathsome suffocating vapours, nor for saving the retort; and this last consideration, even if muriat of antimony could be obtained by it, would give Mr. Scheele's process a decided preference with the practical chemist.

As a mistaken theory has led to this process, I shall point out, as nearly as I can, to what causes the want of success is to be attributed. It seems to me to depend chiefly on two circumstances. First, the antimony is not oxydised sufficiently, as clearly appears from the experiments above, where, after all that muriatic acid could dissolve, a great quantity of antimony was brought into view, seemingly unchanged; but this was pointedly enough taken notice of by that excellent chemist, Mr. Scheele.—

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The oxydation of antimony, too, has its bounds; for, if it be oxydised white, not a particle of it will dissolve in muriatic acid, as I found at the expence of a considerable quantity of materials.

The second circumstance, to which the want of success is to be attributed, is the form of applying the muriatic acid; a proper quantity of fluid not being present as a medium through which the ingredients may act on one another. An opinion has been entertained by many chemists, since the time of Boerhaave, (see Boerhaave's Elements of Chemistry, sect. ix. on neutral salts considered as menstruums) that muriatic acid, in a concentrated form, was capable of dissolving metallic bodies, on which it could produce no effect in a watery state. This inference they have drawn from a few experiments, in the way of cementation and sublimation, conducted with sulphat of iron and muriat of soda. All my experiments, however, concur to shew, that muriatic acid, whether concentrated or diluted, acts but weakly upon metallic bodies, in general, so long as it remains common muriatic acid, and produces no sensible effect whatever either upon antimony or quicksilver; but no sooner does it meet with manganese, or red oxyd of iron, (vulgo colcothar) than it becomes oxygenated, and presently oxydizes and dissolves metals, on which it exerted no power before; and, it appears to me, that its action, under this modification, can be extended much farther in a watery than in a dry concentrated form, merely by protracting the digestion; whereas, in the dry way, it has not time to act to the same advantage, being forced off with strong heat. And oxyd of iron being present in all the operations done with sulphat of iron, explains the effects, falsely attributed to the concentrated muriatic acid. But, even if concentrated muriatic acid were required in this process, it could not be applied to advantage to any metal, by pouring sulphuric acid upon dry muriat of soda.

In the experiments alluded to above, with the sulphatic salts, the muriatic acid is disengaged in a slow progressive manner, in the way of exchanges; but no sooner is sulphuric acid poured upon dry muriat of soda, than the muriatic acid is forced off instantly, in white vapours, and passes away without shewing the least disposition to condense. Even, if a quantity of dry muriat of soda be put into the bottom of a tall vessel, a high column of water poured gently over it, and the sulphuric acid poured thro' the water upon the salt, a considerable portion of the mu-

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riatic acid, instantly expelled with noise, will rise up thro' the water, and fly off, before the operator can agitate the mixture. Accordingly, all expert chemists have found it expedient to dilute the sulphuric acid, in distilling muriatic acid from muriat of soda; and when matters are thus managed, the work goes on quietly, and the vessels may be luted from the beginning. Indeed, Glauber, to whose industry we are indebted for this method of distilling muriatic acid, and, after him, Boerhaave, sometimes used sulphuric acid without dilution; but, in this case, they kept their vessels open till the volatile acid made its escape, and, when they used bole or brick-dust, in place of sulphuric acid, they previously expelled the wild crackling spirit, as they called it, by decrepitation; by which uneconomical mode of proceeding they always lost a great deal of the muriatic acid.

I have thus, I trust impartially, delivered an opinion, grounded on experiments, concerning the process of three Colleges of Physicians for preparing muriat of antimony, and I wish it to be understood, that in what I have advanced, I may be considered as having addressed myself chiefly to the practical chemist. To those who form their opinions, in these matters, according to the degree of credit they place in this or the other writer, or body of men, I would say little, as it would avail little, till they have learnt something of the practice of chemistry. With the former, my arguments will have due weight, as in every trial of this kind his vessels and materials are at stake; and, if he entertains any doubts of my veracity, he has only to light up his furnace, and repeat the experiment; a single instance will convince him of what I have advanced.

I shall now subjoin an account of Mr. Scheele's process, and of the method of properly preparing tartrit of antimony by it.

Take of antimony one pound, of nitrat of potash one pound and a half; mix and dry them, and deflagrate in a crucible or iron mortar. Pound the oxyd thus obtained, and put one pound of it into a glass matrass or digester, and pour upon it fifteen ounces of sulphuric acid, diluted in three pounds of water, and afterwards add fifteen oz. of muriat of soda. Digest, Mr. Scheele says twelve hours, but I have found two or three hours, in general, sufficient, and during that time the mixture must be frequently stirred, and the heat kept moderate, for the muriat of antimony will begin to evaporate before it boils. The muriat

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of antimony, when completely formed, which is known by the milkiness of the solution, is to be strained through linen, and diluted with boiling water, that the pulvis algerothi may precipitate, which is to be repeatedly washed and dried. The pulvis algerothi, thus prepared, still retains a portion of muriatic acid, which cannot be separated from it by ablutions; for, after having washed it upwards of twenty times, in fresh portions of distilled water, I observed that the last had as much of the rough, harsh taste of muriatic acid as the first. But I have never been anxious about separating the muriatic acid entirely, in the suspicion that I might thus alter the state of the oxyd; a circumstance that ought to be carefully guarded against, a slight degree on either side rendering it insoluble in muriatic acid or in acid of tartar. Besides, since I followed Mr. Scheele's method, I have been of opinion that an under proportion of muriatic acid was essential to the constitution of good tartrit of antimony.

With oxyd of antimony, prepared by heat, or by nitrat of potash, I never could obtain tartrit of antimony in transparent crystals; they were always opaque, and stained orange, yellow, or green; a sure mark of an incomplete combination; whereas tartrit of antimony, from pulvis algerothi, precipitated by water, concretes into transparent crystals, which become rather white, or effloresce a little in the open air. In preparing tartrit of antimony, I put nine ounces of acidulous tartrit of potash into a matrass with twelve pounds of water, and when the solution boils, add, by degrees, about six ounces, or six ounces and a half, of pulvis algerothi. During each addition, I have observed a kind of effervescence excited. The quantity of water here ordered, is not sufficient to dissolve, with boiling heat, the acidulous tartrit of potash; but as the tartrit of antimony forms, which is a very soluble salt, the whole comes to dissolve gradually, and thus a considerable time is saved in the evaporation. I am convinced that even less water would suffice, for the reason now mentioned. When the whole is added, the solution is allowed to boil about two hours, perhaps less time would suffice; but as the pulvis algerothi is generally mixed with a grain or two of sulphur of antimony, which passes the filtre, one cannot see when the solution is complete. On this account, the vessel should be allowed to stand in the surface of the sand till the powder subsides, when the acid of tartar will be found to be completely saturated, and a little pulvis algerothi at bottom, mixed with the sulphur

of

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of antimony now mentioned. It is this dark-coloured powder which yields a smell of sulphurated hydrogen gas (liver of sulphur smell) on boiling, for after the solution is passed through a filtre of paper, and again evaporated, the smell is no more observable.

After the solution is boiled down considerably, I pour it into a bason, and again evaporate with a heat gradually decreasing through the night, and next morning I have generally the satisfaction to observe, after breaking the pellicle, fine crystals of tartrit of antimony on the bottom of the bason. The solution must be decanted off into another bason, for further evaporation. The crystals, when allowed to dry in a gentle heat, and examined, I have found to be pyramids, with four flat sides and four right angles, joined together by their bases, and thus the pyramid of one end forming a parallelopipedon with the pyramid on the other end. A very thin square table or plate intervenes between the bases of the two pyramids. Some of the pyramids I have observed to have two of their opposite sides broader than the other two opposite sides, thus exhibiting the appearance of a wedge. The tartrit of antimony thus prepared, though tasteless, still shews signs of muriatic acid, joined to oxyd of antimony, for on scraping the crystals from the bason with a clean polished knife, I found it affected in the same way as from calomel; the muriatic acid readily preferring iron to antimony or quicksilver. Hence, it is a kind of quadruple salt, consisting of oxyd of antimony with muriatic acid, rendered soluble by acid of tartar, combined with an under proportion of potash. And here I think it worthy remark, that I have not found a name, in the new Nomenclature, expressive of its constituent parts.

[To be continued.]

ROBERT STOTT,
Surgeon.

Dumfries, April 3, 1804.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE pamphlet of "William Goldson, Member of the Royal College of Surgeons in London," having this evening fallen into my hands, I offer you some Remarks on it;

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it; to which, if you think them worthy of insertion, I may hereafter make some additions.

The first thing I am struck with is the boldness of the author. His title is, "Cases of Small-pox subsequent to Vaccination." There is at this time a Committee appointed by the Royal Jennerian Society (including a Woodville and a Ring, than which names it would be difficult to find greater authorities in the history of Variola and Vacciola) to investigate *a case* which the author would doubtless not hesitate to rank with those of his pamphlet. Being on this Committee, I have had the opportunity of observing with what becoming modesty and caution men of the greatest experience and character offer their opinions, and I cannot but think that the title of the pamphlet under my eye, would have been only correct if it had been expressed, after *supposed* cases of Vaccination. The practitioner who inoculated in *the case* yet *sub investigatione,* informed me that as he had not taken minutes of it at the time, and did not now remember it, he supposed it had been a spurious case; and I persuade myself that *the different cases* of W. G. must all have been spurious cases. But, let me turn to the pamphlet.

Page 9. "If we (they of Portsmouth, Portsea, and Gosport) were not so early in adopting it (Vaccination) as in places less remote from London, we have embraced one very material advantage by our forbearance—we have experienced a much smaller number of failures. In no instance, have I myself seen any approach to a spurious disease; and very few indeed, to my knowledge, have occurred, &c."

"But the occurrence of small-pox in Clark, one of the marines first of all inoculated at the Infirmary by Mr. Rickman, seemed to give some check to the practice, &c."

Page 8. "With matter taken from this source (the Infirmary) I inoculated four children. And in a very short space of time it was pretty generally adopted in the neighbourhood." How could any but spurious cases be expected from the source which failed to yield protection to the marine?

Page 16. The author says of one case, "Several medical gentlemen saw the child with me, who were decidedly of opinion as to the nature of the eruptions.—That they were variolous." When a man goes to oppose his own to a general opinion, he ought to be very clear in the establishment of every statement. Why does not he give the names of his medical gentlemen? It ought not to

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to have been a fortnight or more after his inoculation with variolous matter before the medical gentlemen visited the child. From his own description of the case, they must have possessed very superior powers of discrimination to have been able to distinguish the nature of the remaining eruptions, covered with a warty scurf or encrustation, four days before their seeing them. I think his case of small-pox must have been altogether spurious. But, *passons* to the cases of the author's own vaccination.

Page 25. "The pustule was perfectly satisfactory, &c." To whom? Here we have not even the concurrence of anonymous medical men to substantiate the author's conclusion. On this subject, above three years afterwards, "seven distinct eruptions appeared on the face, neck, and arms. These were so characteristic of the small-pox, that neither Mr. Hill, Mr. Seeds, or Mr. Weymouth, three respectable practitioners in Portsea, who saw the child with me, hesitated to pronounce them the effect of variolous contagion."

Had these gentlemen seen the child under its supposed vaccination, they would probably have had to declare, *it must be re-inoculated, it is not yet protected.* In this way I have myself had to damp the joy of surgeons up the Mediterranean both Spanish and Italian. They have shewn me finely inflamed looking arms; but I had been already too much harrassed with spurious cases to hesitate for a moment in pronouncing the effects altogether spurious.

Page 29. "The progress of the arm was extremely regular, &c." "Matter was taken from the pustule early on the ninth day, which I used on a child who had the disease nearly in the same manner, &c." "Mr. Merritt, of Portsmouth likewise vaccinated a child with matter from the same source." Did he see the pock from which it was taken? If so, he must have had an eye as little experienced in detecting spurious pustule as W. G. or the surgeons up the Mediterranean. The author has clearly shewn that the child had the small-pox three years afterwards.

These are not all the cases of small-pox which have occurred after supposed cases of Vaccination, *in the place where they have less than in others experienced failures;* but I have not at present leisure to go further into the subject.

Salisbury Square, 28, *iv.* 1804. JOHN WALKER.

P.S. 5, v. 1804. An application has just been made at the Central House of the Royal Jennerian Society for vaccine matter from "Dr. Waller, of Portsmouth," with the remark, that that which they have there cannot be depended

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pended on; and on that account he sends to the Society, where he reckons upon being furnished with the genuine. Thus we find that, happily, all the medical men in that neighbourhood have not, in suspicious cases, the full confidence of W. G. Let us hope then that spurious pustule will there disappear, and that the inhabitants will hereafter have only to do with the certain protection.

11, v. 1804. I have just been called upon for another packet of vaccine matter for "Mr. Shute, of Gosport," and have sent a rich supply, which may produce more *heartfelt* conviction in those parts than long arguments.

OBSERVATIONS ON THE SEVERE DYSENTERY, *as it existed on board the Lord Duncan East Indiaman during a Voyage to Bengal, in* 1802—4. *In a Letter to* JOHN HUNTER, M. D. F. R. S. *Physician to the Hon. East India Company. By* JAMES ATKINSON.

Dear Sir,

NOTWITHSTANDING the multiplied labours of medical men for the elucidation of difficult and obscure points in the profession, and acknowledging with due admiration the vast improvements of late years, there is much left behind to exercise the sagacity, the talents, and discrimination of succeeding practitioners. They have not yet acquired that quickness of perception, and soundness of judgment, which must enable them fully to comprehend the phenomena of disease. They have, however, been indefatigable in their inquiries; and such exertions as tend to alleviate the anguish of disease, and to lessen the weight of human misery, must ever be regarded as noble and exemplary: for those feelings are surely the most honorable, which excite a man, independently of his professional obligations, to devote his time and abilities to the common interest; and the more dangerous or fatal the maladies are which we have to encounter, the more it requires of steady and unremitting zeal in the prosecution of our studies.

From the incommodious situation of the sick on board a ship, and their want of proper attendance, the medical practitioner labours under numberless disadvantages. Often his intentions are rendered useless by their neglecting the regulations prescribed; every auxillary means is probably disregarded; and those who do recover from any malignant disorder, are generally indebted to the effects of

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of medicine alone! On entering the sick-birth, where a number of patients labour under a complication of diseases, the mind, filled with a serious emotion, must frequently advert to that awful scene, so well described by our immortal poet, where he emphatically enumerates the miseries which harrass mankind.

> ——— Pining atrophy,
> Dropsies, and asthmas, and joint racking rheums;
> Dire was the tossing, deep the groans; Despair
> Tended the sick, busiest from couch to couch;
> And over them, triumphant Death, his dart
> Shook,—but delayed to strike!

The ingenious and profound publications of Hunter, Pringle, and Lind, may be supposed to have rendered any further remarks on the Dysentery superfluous, and obtrusive; but as long as diseases resist the operation of medicine, there can be no end to investigation. The object of these pages is to describe a practice in the treatment of this formidable and distressing disease, which I have found peculiarly successful. The facts adduced, occurred during a voyage to Bengal. The fatal cases, as well as those of favorable event, are faithfully mentioned, for this is an ingenuousness we owe to society in every scientific and medical inquiry.

The Lord Duncan* sailed from the Downs on the 14th of October, 1802, and arrived at the Cape of Good Hope on the 22d of December; during which time two seamen were attacked with dysentery: at the Cape one of them, who was advanced in life and very infirm, died. On the 24th of February, 1803, three hundred and sixty soldiers embarked for Madras. In the passage of about eight weeks, twenty had severe dysenteric complaints, one of whom died, and an infant child. Having wet, tempestuous weather off the Cape, the disease appeared epidemical. At Madras, and from thence to Diamond Harbour, a period of a month, eight had the dysentery. During the ship's stay in India, which was six months, a great number suffered severely under the same complaint, but only one died. Off Kedgeree and Saugor Island, in September and October, the remittent fever was very severe, and often fatal, the dysentery raging at the same time.† Homeward

* The voyage was completed in eighteen months.

† The number of sick on board the Lord Duncan, during the six months in India, was 105, and only two died of disease, and one from an accident! This

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ward bound, many slight cases occurred, and some in a violent degree. Calomel was the remedy always resorted to with advantage.

The carpenter, a middle aged man, reduced by almost continual intoxication to a tottering debility, being harrassed by quotidian ague and the dysentery, died as we left Bengal.

Excessive heat and cold are powers perhaps equally debilitating, but the alternation of heat with cold is more injurious than either. Heat succeeded by cold and moisture, is generally, I believe, one principal cause of the dysentery; and Dr. Cullen observes, that "it happens in the same circumstances and seasons which considerably affect the state of the bile in the human body. But as cholera is often without any dysenteric symptoms, and copious discharges of bile have been found to relieve the symptoms of dysentery, it is difficult to determine what connection this disease has with the state of the bile."

Does it not appear more than probable, that a deficiency rather than a redundancy of bile in the alimentary canal, is the cause of the dangerous symptoms of the dysentery? for from derangement in the functions of the liver, the bile, whose properties are known to be antiseptic, is prevented

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This is a very small proportion considering the oppressive heat of the climate, and the various noxious exciting powers to which a seaman's life is continually exposed!

Windsails and fumigation, with sulphur and gunpowder, were constantly employed in the voyage outward. It may be observed that swabbing the beams and deck with common vinegar, though recommended in medical writings for ages past, is not attended with its boasted good effects. The volatile or spirituous part of it soon evaporates, and the consequent dampness, which is so extremely prejudicial to the healthy and much more to the diseased state, is sufficient confirmation that no salutary effect can result from its use. Even distillation (Lavoisier) does not deprive this acid of all its unnecessary water; for this purpose it may be exposed to a degree of cold from 19° to 23° of Fahrenheit; by this means the aqueous part becomes frozen and leaves the acid in a liquid state, considerably concentrated. If half the quantity of vinegar that is wasted in the manner above alluded to, was served out as a corrector of salted diet, to the ship's company, I am persuaded the scurvy would be much less prevalent and seldom so formidable in its symptoms and progress. A good allowance of this article and mustard, perhaps was the cause of an exemption from any scorbutic complaint in the outward bound voyage. I would also strenuously recommend fumigation with nitrous vapour. It is of superior efficacy in preventing and mitigating the violence of disease, and also much less expensive and unpleasant than the method above mentioned. It oxygenates the atmosphere more successfully, and its universal adoption in his majesty's navy, is the most forcible testimony that can be urged in favour of its usefulness.

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prevented from passing through its proper and legitimate channel, and from this source the mucous excretions become so putrid and acrimonious. Obstruction in the common duct may be owing to spasm, torpor, or paralysis; and when there is pain over the pit of the stomach, which very frequently occurs, I suppose the seat of it to be the extremity of the bile duct, where it terminates in the duodenum.

In England, the dysentery or cholera occurs generally about autumn, and more particularly after a sultry summer, when bilious intermittent and remittent fevers prevail. It is seldom fatal, and when that does happen, no ulceration or tubercles in the intestines can be found;* nothing more than a gentle laxative, with proper regimen and cordials, being required to effectuate a cure.

There is perhaps some plausibility in the opinion, that the nature of the dysentery resembles the epidemic catarrh or influenza. The application of cold and moisture will certainly produce both diseases. The mucus membrane of the nostrils is similarly affected to the mucus membrane of the intestines; and to there being more extension of surface in the latter, may be ascribed the greater severity of the dysentery. In the catarrh, the mucous, from its ichorous quality, inflames and swells the lip; and inflammation of the inferior part of the rectum, will occasion the distressing tenesmus which is such an agonizing symptom of the dysentery. The afflux of humours in both, is of the same purulent kind. The liver too of those who died of *catarrhus contagiosus*, has been generally diseased;† and the same method of cure will nearly apply to them both. These circumstances strongly point out the analogy between the two diseases.

In the severe dysentery of hot climates, the liver is more or less affected, and hence the increased violence of every symptom. The eyes of every patient which I have seen, have been considerably tinged with yellow. The obstruction in the *ductus communis*, for bile has been said to be the natural purge of the intestines, and the inverted motions of the lacteals from debility, account for the white mucous evacuations, resembling chyle; and hence the salutary effect of mercury and opium in removing the offending cause, and promoting the healthy action of a set

* Vide Baillie's excellent book on Morbid Anatomy, p. 175.
† Darwin's Zoonomia.

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set of vessels so important to the support of the system. According to this opinion, brisk cathartics, as they carry off so much of the fluid, elaborated by the process of digestion, are improper. But a Dr. Wade has written a book,* wherein he attacks with haughtiness and vehemence, all practice but that which he struggles to defend, viz. *purging!* Never man manifested more anxiety and groaning of spirit than he does in persuading his readers of the incontrovertible truth of his doctrine. Every medicinal power, though recommended by the consent of the highest characters, he contumaciously rejects, to give room for the universal purging despot, whose influence he wishes to extend over every form and modification of disease. This is in perfect harmony with the old system, which enjoins bleeding in hæmorrhages though in a nearly exhausted subject. *Cantilenam eandem canis.*

In a book called Observations on Hepatic diseases, the dysentery is attributed to a diseased liver. Though written in a curious style "with many holiday and lady terms," the arguments appear sufficiently conclusive. The fatal cases and the dissections are related; and in all, the liver or its appendages were found in a morbid state. Sir John Pringle describes four dissections of dysenteric patients. In the first, the liver was not apparently altered by disease, but the bile was thick, ropy, and of a dark hue. In the second, the liver was small and sound, but the gall-bladder was of an uncommon size and full of dark coloured bile, thin though somewhat curdled. An enlarged spleen. In the third, the liver was of an extraordinary bulk, weighing ten pounds, with an abscess. The gall-bladder was of an immoderate size, and full of thin black bile. In the fourth, the liver was in a sound state, the gall-bladder was empty of bile and contained only air. In all these cases, mortification of the large intestines had taken place, and a tenderness of all the viscera, the whole alimentary canal containing nothing but air.

From this affection of the liver, Sir, which has hitherto been overlooked by most practitioners, or only regarded as merely adventitious, I conceive the disease, both in the East Indies and everywhere else, to be so severe and dangerous. But this affection does not *alone* demand the necessity

* See Select Evidences, &c. &c. by John Peter Wade, M.D.

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cessity of mercury* in the dysentery. Dissertations have been purposely written to recommend it even in low fevers, and its specific power in many infectious diseases, as syphilis, &c. warrants the opinion that contagion itself affecting the human system, may be deprived of its principal force by the prudent administration of this celebrated mineral.

It would be an important question to decide, Sir, whether the dysentery is, or is not contagious. The inquiry would involve an extensive discussion incompatible with the limits prescribed for this work, but a few observations may be necessary. The opinion that the dysentery arises from a specific contagion is certainly unfounded. In crowded ships the best opportunities present themselves of ascertaining this fact, and I never saw a case which could be referred with certainty to contagion. Pringle seems to doubt the sagacity of Sydenham and Willis, because they did not find that the dysentery was contagious. Sydenham's history of the epidemic, I believe to be very faithful and accurate; and no symptom or medical fact could have reasonably escaped the notice of such an eminent practical physician. Experience qualifies the proposition, that the same noxious exciting powers will act differently on different constitutions. If they induce diseases depending on debility, the indication of cure will be the same; as the system, whether affected with the dysentery, typhus fever, or other asthenic diseases, requires stimulant operation for the re-establishment of the healthy state. Leeuwenhoeck, the celebrated microscopical philosopher, and Linneus, discovered through their glasses, insects in the mucus of the

* When even mercury does not produce soreness and tenderness of the mouth, it is probably of no service. I remember seeing a young man of a weakly habit at Calcutta, under the care of a surgeon of some eminence, who had been ill of the severe dysentery twenty days, and during that time had used two drachms of ung. hydrarg. and about twelve grains of calomel every day. His mouth was not the least affected and the disease had not abated in its violence. In this case the calomel was not combined with any opiate or astringent, which accounts for the continuance of the flux. I afterwards heard, that on the fourth week of the disease, abscess of the liver had formed, and its suppurating internally, occasioned his death. The Herculean practice which has become so popular with respect to mercury, and which seems to be absolutely necessary to obviate the fatal tendency of diseases incident to tropical climates, has astonished many medical men who have visited the hospitals in India. And even private individuals, aware of its efficiency, have calomel constantly by them, which they take immediately on the approach of indisposition.

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intestines of dysenteric patients; and it has been sagely conjectured, that floating in the atmosphere, they have produced the complaint. Consequently, the fæces not being immediately removed, have been supposed to be highly contagious. By increasing the malignity of the air we breathe, they will of course be injurious, but they will not produce the dysentery by a specific power. It would be well if medical men would attend more seriously to this question, and not have such an implicit dependance on the representation of others.

Along with the mucus the villous* coat of the intestines is frequently separated and discharged, as appears by its filamentous and organic structure. The same coat of the stomach is also often abraded. Thus the tunica nervosa becomes exposed and bare, and hence that pungent and scalding pain on swallowing solid food and even liquids in the severe stage of the dysentery.

Various reasons have been given, of so much pure blood being evacuated by stool in this disease. Hæmorrhagies of this kind generally proceed from deranged action of some part of the venous system. For when either direct or indirect debility is established, or the excitability nearly consumed by repeated intoxication, the veins cannot propel the blood forward to the heart with sufficient impetus, as is exemplified by the oozing of thin dark coloured blood, from different parts of the body, in the last stages of putrid fever and scurvy. This diminished energy, when there is an hepatic affection, may predominate in the vena portarum,† and hence the great quantity of blood which is frequently discharged in the severe dysentery. The symptom is not uncommon amongst those much reduced by an excessive indulgence in strong fermented liquors.

From my experience in marking the characteristic symptoms of the dysentery, the patient first complained of chilliness and lassitude, with dry febrile heat, and then griping pains, and frequent purging, attended with tenesmus. The pulse was small and quick, a suffusion of yellow soon appeared over the tunica albuginea, and the complexion a little jaundiced. The evacuations by stool at first, were of frothy mucus, and occasionally streaked with blood, but never of a scyballous appearance; and what is perhaps

* Vide Edinburgh Essays, vol. vi. p. 150.

† Dr. Saunders supposes the chronic inflammation of the liver to originate in the vena portarum; and a flux of blood downwards is an indication of a diseased liver.

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perhaps more singular, there was no flatulence in the bowels. The griping and tenesmus became excessively severe. The calls to stool grew almost constant, but nothing was voided, except a little slimy tenacious mucus. Some had frequent prolapsus ani, violent dysuria, and lancinating pains over the pelvis and abdomen. There was an evident imbecility in the intellectual functions, with an incoherence of thought and expression. The pupil was contracted. A hiccup came on. Sometimes black fœtid matter was vomited, and the most excruciating symptoms supervened. The pulse became languid, and scarcely perceptible; the stools intolerably offensive, often nothing but blood; and the disease being left to itself, death soon closed the catastrophe.

I have thus drawn the progress of the Dysentery, as uninterrupted by the operation of medicine; but when early application is made for assistance, the dangerous symptoms are generally soon alleviated.

The sympathy between all the floating viscera of the abdomen is sufficiently proved by experience. When the intestinal canal is diseased, the contiguous membranes will become diseased also. The mesentery will inflame, suppurate, mortify, or become schirrous; and from induration of the glands, a wasting of the body will inevitably ensue, and a gradual decay of the energies of nature. On this principle we may account for that lingering state of the dysentery, when not even a glimmering of hope can be entertained of a favourable termination.

Respecting the cure, Dr. Mead says, "Semper primum sanguinem mittere expedit;" but the adoption of such practice is often pregnant with much mischief, and is always inadmissible in a hot climate. I never saw inflammatory symptoms so urgent as to require particular attention. On the contrary, the torpor of the brain, stomach, and other important viscera, indicate a penury rather than an exuberance of blood; and the rapid decay of all the vital powers, is the most pressing and dangerous enemy that we have to cope with. Emetics have been greatly recommended, and at the commencement they may be of use in evacuating and clearing the biliary ducts, but afterwards I conceive them to be very doubtful auxiliaries. The application of a blister on the abdomen is much more distressing to the patient, than any benefit I ever saw derived from it. Peruvian bark conjoined with opium was given with an intention of more certainly counteracting the dissolved state of the fluids, but the stomach seldom

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retained it. The addition of absorbents and aromatics were often also unsuccessful. Sir J. Pringle, apparently, thinks every purgative beneficial; but the ease obtained by purges is always momentary and fallacious. The temporary exhaustion produced by such medicines, gives deceitful quiet, which is constantly succeeded by still more violent pains than before. You, Sir, have also recommended purgatives in your valuable and interesting Observations on the Diseases of Jamaica; they may have done good, but I have not myself found their efficacy in the few cases that have come under my observation. The exhibition of enemas I had formerly found, by their mechanical irritation, only exasperated the symptoms, and more particularly when the rectum was supposed to be ulcerated. Warmth, in general, is of manifest advantage; fomenting the abdomen with warm vinegar, and afterwards the application of a few folds of flannel round the body, being of eminent service. The torpor and inverted motion of the stomach will be relieved by elixir of vitriol, opium, and the essential oils. The combination of opium and calomel, prevents the catharsis and nausea which would result from the use of calomel alone, and they form perhaps the noblest remedy we are yet acquainted with.*

We are even told by Dr. Killner† that the dysentery has been cured by a violent drubbing; which, though whimsical enough, is, I think, extremely probable, as the excitement occasioned by such a stimulus, will produce an accumulation of sensorial power, according to Dr. Darwin, and thus overcome the torpor and debility attendant on the disease. The learned votaries of Venus can explain similar curious phenomena. And it is a known fact that a diarrhœa will be checked or removed‡ by the stimulus of a flannel shirt worn next the skin.

The celebrated Sydenham had great confidence in the powers of laudanum, which he says is alone sufficient to perform a cure. About his time many were prejudiced against the frequent use of that invaluable medicine; but Sydenham found

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* A small dose of Dover's powder, or antimonium tartarizatum, every night at bed-time, joined with the mercurial and opiate medicine, seems necessary to the cure.

† Vide Act. Acad. Naturæ Curiosorum, vol. iv. obs. 20. See also a case mentioned by Darwin of two patients in the Edinburgh Infirmary ill of the dysentery, who recovered from the disease, after being stimulated by anger and fighting.

‡ Zoonomia.

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found out its virtues, and he thanks the Omnipotent for such a blessing, in a strain of enthusiastic devotion.

From this view of the subject and the medicines which have been recommended, the plain conclusion is, that the dysentery being a disease of the highest debility, chiefly predominant in the alimentary canal, those medicines which produce excitement over the system are only applicable; and particularly the following. Calomel with tartarized antimony and opium; cheerful emotions of the mind; a rich nutritious diet, and Port wine.

Having hastily premised these remarks, which are the result of careful observation, uninfluenced by any preconceived opinion, the succeeding Cases will illustrate the principle and practice more clearly.

CASES.

1. Isaac Morn, armourer, of a robust habit, was seized with frequent purging of mucus and blood on the 21st of May. Six grains of calomel were prescribed for him, and an anodyne at night.

Second day of his illness. Has had acute pain in the lower part of the abdomen. Has great thirst, tongue dry and furred, with a small rapid pulse. Countenance yellow. The stools are still mucous and bloody, and very frequent. Take six grains of calomel joined with one grain of opium directly, and rub in ung. hydrag. ʒjß. on the region of the liver, twice a day.

Third day. Slight nausea; flushes of heat; pulse weak, tongue foul, and thirst urgent. Pain over the scrobiculus cordis. Has had but six stools the last twelve hours, principally of a greenish yellow, and without any streaks of blood. Take frequently of an acidulated drink and repeat the calomel cum opio three times a day, continuing the ointment.

Fourth day. Had considerable griping all day yesterday, and his stools were extremely offensive. The pulse is now regular and the fever subdued. His gums and throat are affected by the mercury. Evacuations more natural, and of a less intolerable odour. Complexion rather clearer. Repeat the medicine, but in smaller doses, and omit the ointment.

Fifth day. To day the purging is less frequent, and he only complains of soreness of the bowels with occasional griping pains. Discontinue the calomel, his mouth being more affected, and take the draughts as prescribed, three

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times a day. Tinct. opii gtts. xxx. conf. aromat. ʒj. ol. menth. ppt. gtt. ij. aqua ad ʒij. M.

Sixth day. The medicine yesterday promoted a gentle diaphoresis and the pain of the bowels abated. Has had two motions the last twenty-four hours of the natural consistence and colour. An absorbent draught with tinct. opii gtt. xx was given last night. Has now no complaint whatever. To continue the medicine a day or two longer.

What analogy or connection there may subsist in the constitution of fevers of the intermittent and remittent type and the dysentery, it is difficult to pronounce; they, however, change into each other with camelion-like facility, exhibiting the symptoms of each in almost regular succession. Can it be the influence of *bile?* What principally leads me to the conclusion, that superabundance of bile has nothing to do with the dysentery is, that I never myself could observe the least reason for the supposition. The disease is, no doubt, in many instances, owing to obstruction, or otherwise a stimulus, which excites an inverted motion of the parts concerned in its production. But whatever there may be wrong in the hepatic system, it is certain that little or no bile passes by the intestines. This subject affords an extensive field for investigation; and what applies to fevers, generally denominated *bilious*, will be treated of in another place.

[To be continued.]

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IN compliance with the desire of Academicus, I have endeavoured to elucidate the case of the little boy, noticed in p. 461 of your last Number. The remote cause of his illness may, I think, be attributed solely to the effects of cold; which certainly would not have affected him half so severely, if he had breakfasted prior to his exposure. Though there is nothing in the short history of the case, which could lead one to suppose that the child suffered in a peculiar manner from the situations in which he was placed, either before or after breakfast; yet he might, unobserved, have been exposed to a current of air. Though delicacy almost forbids me to animadvert

on

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on the means adopted for the recovery of the child, yet a sense of duty imperiously stifles inferior considerations, and declares the propriety of dissenting in opinion, and of pointing out such remedies as might have been conducive to what the parents would have considered a happy event.

Then, advancing on the position that cold was the remote or occasional cause of the child's illness, would not an emetic have had a good effect in overcoming that stricture on the surface, which was certainly the proximate cause of the disease. The perspiration was checked, and those fluids which should have escaped by the skin, were determined to the bowels, producing that congestion which was certainly the cause of bilious dejections. When the apothecary was sent for, I suppose, from his sending a saline mixture, that the child had some sickness at the stomach; the calomel purge was well calculated to rid the bowels from bilious matter, and the blister might have some effect in relieving sickness.

When the physician was called in, he continued the calomel, and ordered blisters to the inside of each leg; his ideas of treatment seemed to coincide perfectly with those of the apothecary. In such cases as these, I have found the happiest effects from emetics in the first instance, followed up by sudorifics; and by way of an auxiliary, I have often had recourse to the warm bath, keeping the child in it until it became faint, after which it has been wiped dry, and wrapped up in flannel, which will in general restore the perspiration, the first grand step towards recovery. That connection which subsists between the bowels and skin is very striking; when the pores are obstructed, diarrhœa or fever, for the most part, supervenes, and is frequently attended with sickness or vomiting; and Sydenham tells us, that these complaints are not to be overcome without the aid of external means, applied for the purpose of producing perspiration, or a determination to the surface of the body. I am of opinion, if the warm bath was resorted to oftener than it is, the art of healing would be greatly benefited. In bilious cases, when the remote causes may be attributed to the effects of cold, and when there is a congestion of blood in the vena portarum and hepatic vessels, does not the warm bath appear to be a remedy likely to be productive of the happiest consequences? In cholera morbus, a disease unparalleled for its violence, and which brings many to an untimely grave, this remedy might be employed with great advan-

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tage. In all fevers, during the state of apyrexia, we find the stomach is relieved from nausea; and when the perspiration is restored, the different parts of the body perform their functions with ease.

There is another remedy for restoring perspiration, which I have employed myself in several instances, and particularly in typhus, or ship fever. I once had a patient, whose fever had continued many days without any intermission, during a voyage to America. I had recourse to such medicines as are generally used on these occasions, without experiencing the least benefit from them; his skin was parched, tongue foul, black, and dry, with every unfavourable symptom. I ordered him to be taken out of his hammock, had his shirt taken off, and several buckets of cold water poured over his head, gradatim, for it was necessary to be cautious in this case, as he was extremely debilitated; and had been delirious for some time; he was wiped dry, wrapped up in blankets, and put to bed again. The cold applied to his head, soon restored the lost energy of the brain, and reason again assumed her throne. The effects of the cold on his body, produced such a degree of reaction, that the stricture of the extreme vessels was easily overcome; he burst out into an abundant perspiration; and from this moment he began to recover, and his cure went on rapidly.

It is well known how difficult it is to prevail upon young children to take medicine; and when administered, its inefficacy, unaided by other means, is too frequently experienced: and where it is obvious, from a review of the occasional causes of a disease, that cuticular secretion forms the most prominent and leading indication of cure, what is more likely to effect this, than the tepid bath? In the hot fit of an intermittent, when the patient is scorched as it were with fever, how sensibly is he relieved when the pores of the skin are forced open, and perspiration begins to flow. But here I must remark, in allusion to that mode of treatment which I have recommended, that many of our first-rate physicians have had candour enough to acknowledge, after the death of their patient, that a different treatment might have crowned their endeavours with success; yet such declarations are not clothed with the garb of conviction. Medical men are certainly instrumental towards the recovery of people from sickness; but when the decree of death is passed, the most splendid abilities lose their lustre amidst the dark gloom of expiring nature!

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nature! The fatal symptoms of coma and convulsions, which closed the scene of this child's illness, might have been occasioned by hydrocephalus.

I am, &c.

Romsey, May 11, 1804. RALPH CUMING.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

ANY thing like vindictive controversy or replications of illiberality or malevolence, ought to be universally deprecated and scouted; but in what manner such have (as Medicus has asserted in your last Journal) tended more to embarrass than to elucidate the science of medicine, demands a more satisfactory proof than mere suggestion.

What has excited controversy of such obnoxious contexture, seems to be the fair relation and detail of certain experiments, or the result of individual practice, upon the salutary operation of cold affusion in arthritic paroxysms. From the recent introduction of this mode of treatment of gout, has arisen a conflict which, although it has little or no claim to candour, nor is it indicative of benevolent interest for public welfare, is certainly incapable of degrading your Journal, embarrassing the science, or sinking the exalted establishment of medical enquiry into contumelious puerility.

I must conclude with Medicus, that theories are very often intended more to convey plausible and ingenious opinions of subtle speculatists, than to lead to a prompt and successful practice; yet I cannot but observe, that whatever may be our deficiences in the knowledge of the operations of the nervous system, there may be good room for cautious experiments and warrantable deviations from general practice, if they are derived from strict analogy, and supported by a successful issue.

It much surprises me, that Medicus, who starts as a reformer of medical discussion, and the strong advocate for the plain and simple detail of all means from the weakest to the most potent, conducive to the cure of disease, should so far forget himself as not only to fall into the defects of which he so much complains in others; but also, that he should depreciate the merits and the good effects derived from

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from the practice of cold ablution in gouty affection. According to him, the *practice is contrary to all sound experience*; not *one instance*, however, does he record where he observed its pernicious effects. Instead of facts he contents himself with assertions.

If gout be a general disease, (as Medicus believes it to be) why should not local means contribute to the cure, or remove that local affection which is the principal part of the disease; the removal of which, as in many cases of symptomatic affections, might accelerate the progress of a general, or at least temporary cure of the whole? But we know as little concerning the causes of disease in general, especially of gout, or how they induce diseases, as we do of nervous operations; and in how many instances do we endeavour to cure general morbid action by destroying the principal leading symptoms? But the grand question seems now to be, whether the gout be a local or general affection? or whether, after the frequent repetitions of its severity, it may not become catenated with, or form general morbid sympathies? Now, should the gout be originally a general disease, there can be no pathological reason why the practice of local means, which vanquishes the most harrassing symptom, should not induce a salutary change in the diseased movement of the animal machine, and by that process, produce a restoration of its healthy faculties. By the same rule, those diseased sympathies arising from local arthritic affections, should gout be primarily unconnected with the system, may be interrupted, and more salutary, o rthe accustomed healthy action redintegrated by the mere influence of local remedies.

Let the opinions of medical men rest upon either side of the question, no ground can be tenable for uncandid and inefficient declamation; and a stubborn inflexibility in opposing practical and laudible innovation is more injurious to science than the greatest absurdity of the most flimsy hypothesis.

I could adduce as many instances in support of the efficacy of the reduction of temperature in gouty paroxysms, by cold water, as Medicus has supposed instances contraindicative of its use or inadmissibility; but I shall content myself in the relation of a single instance, where the application of cold water was attended with the happiest result. In this case it was not directed by practical experience or legitimate speculation, but by the mere instinctive impulse of the suffering victim.

A super-

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A superintendant of a fishery in Newfoundland, labouring under a gouty paroxysm, and, as is usual, strongly advised to remain confined to his room, suffered severely from the pain and great inflammation in one of his feet; but wishing to discharge his official duties, he became determined, against all persuasion, to go to sea in one of the fishing vessels. He silenced all opposition to his resolve, by crying out that his pain and the heat of the affected part were so great, he was confident nothing could abate them but cold; and if that did not relieve him he would as lief die at sea as suffer so much torment in bed. The consequence was, that the poor sufferer was carried to the vessel, in which he put to sea, and was obliged, as is usual, to remain for several hours nearly up to his knees in salt water. In this situation, to the great astonishment of every one present, the pain and inflammation abated, and the man ceased to complain; on his return home he insisted on his wet clothes remaining upon him, and in case of the symptoms returning, to have buckets of sea water in readiness. By this treatment he always procured relief; and his habits of living induced many severe accessions, almost every year, for which he would be carried into the sea and there remain until the accustomed alleviation of his symptoms took place; besides this, he had the inflamed parts wrapped in cloths immersed in the same fluid, which never failed of procuring the desired relief.

St, George's Place, Blackfriar's Road, April 10, 1804. PERSCRUTATOR.

We request this Correspondent to send for his other paper, as some parts require elucidation. Ed.

Translation of the Report lately made to the Class of Mathematical and Physical Sciences, of the National Institute of France, in relation to the Prize founded by the First Consul, subscribed by the Names, Laplace, Halle, Coulomb, Hauy, *and* Biot, *Reporter.*

THE National Institute, which has taken an active part in the great discoveries with which the theory of Electricity has been lately enriched, feels, in all its extent, the importance of the subject indicated by the First Consul. Of all the physical forces to which the bodies of Nature are subjected, electricity appears to be that which manifests its

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its influence the most frequently. It not only acts on inorganic bodies, which it modifies or decomposes, but organized bodies themselves experience the most astonishing effects from it. That which was, for the antients, only a simple result of some attractive properties, is become, for modern philosophers, the source of the most brilliant discoveries.

We may divide the history of electricity into two periods, which are distinguished, as much by the nature of the results, as by that of the apparatus employed to obtain them. In the one the electric influence is produced by the rubbing of glass or resinous matters; in the other, electricity is put in motion by the simple contact of bodies between themselves. We should refer to the first of these two epochs, the distinction of the two species of electricity, resinous and vitreous, the analysis of the Leyden bottle, the explication of the thunder-storm, the invention of *paratonneres*, (Franklyn's iron rods, &c.) and the exact determination of the laws, according to which the repulsive force of the electric matter varies with the distance. The second comprehends the discovery of the muscular contractions, excited by the contact of metals, the explication of these phenomena by the movement of metallic electricity; and, lastly, the formation of the electric column, its analysis, and its different properties. Volta has performed in this second period, what Franklyn did in the first.

The sciences are now so connected among themselves, that whatever serves to perfect the one, at the same time advances the others. Under this point of view, Galvanism will form a memorable epoch in their history; for there are few discoveries which have given to Physics and Chemistry so many new facts, and so different from what were known before. Already has the *ensemble* of these facts been referred to a general cause, which is the movement of electricity; it remains to determine with precision the circumstances which accompany them, to follow the numerous applications which they offer, and to discover the general laws which are perhaps included in them.

The greater part of the chemical effects exhibited by the new apparatus have not received explications completely satisfactory, and it is so much the more important to know them well, as they furnish to chemistry, means sufficiently powerful to decompose the most intimate combinations. It is equally interesting to examine whether the electric properties that certain minerals acquire in their variations of temperature, do not depend on a disposition of their elements

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elements, analogous to that which constitutes the column of Volta. And lastly, it is desirable that the theory of electricity, augmented by these new phenomena, should be compleatly submitted to calculation in a general, direct, and rigorous manner; and the steps that have been already taken in this career have proved that this difficult subject demands the sagacity of ingenious Physics, and the succours of the most profound Analectics.

But it is, above all, in their application to animal economy, that it highly imports us to consider the galvanic apparatus. It is already known that metals are not the only substances, the contact of which determines the movement of electricity. This property is common to them with certain liquids; and it is probable that it extends, with different modifications, to all the bodies of Nature. Do not the phenomena which the torpedo and other electrical fishes offer, depend upon an analogous action, which may be exercised between the different parts of their organization? And does not that action exist with a degree of intensity less sensible, but not less real, in a number of animals, much more considerable than has been generally believed? An accurate analysis of these effects, a complete explication of the mechanism which determines them, and the aggregation of those which the column of Volta presents, would give, perhaps, a key to the most important secrets of animal physics. In thus considering the *ensemble* of these phenomena, we can presage the possibility of a great discovery, which, by developing a new law of Nature, would refer them to one single cause, and connect them with those which the movement of electricity furnishes us with, in minerals.

These considerations have doubtless had their due influence on the class; and if it has not proposed a prize for the improvement of this part of physics, it is because the extent of the subject seeming to demand more than one *concours*, it could not devote to that alone, the encouragements which it owes, in general, to all the branches of useful knowledge. However, each one of its members, and all the learned of Europe, ought seriously to wish, that the researches of Naturalists may be directed towards this important end, and they should congratulate themselves on seeing their wishes now fulfilled in the most compleat manner.

To answer the intentions of the First Consul, and to give to this *concours* all the solemnity that the importance of the object, the nature of the prize, and the character of him that has founded it, require, the Commission unanimously

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mously proposes the following project: The Class of Mathematical and Physical Sciences of the National Institute, opens the general *concours* demanded by the First Consul. All the learned of Europe, including the members resident and associate of the National Institute, are invited to the *concours*. The Class does not expect that the Memoirs should be directly addressed to it. It will crown every year, the author of the best experiments that shall come to its knowledge, and which shall have accelerated the progress of science. The grand prize will be given to the person whose discoveries in the history of Electricity and of Galvanism, will form an æra, or a memorable epoch. The present report, including the letter of the First Consul, will be printed, and will serve for a program. Done at the National Institute, 11 Messidor, year 10.

Catalogue of such British Plants as have been found in any Shape serviceable to Man, whether in a medicinal, œconomical, culinary, or agricultural Point of View, together with an Account of the Uses which they have been made to answer, and an accurate Botanical Description of each Plant.

(Continued from our last, pp. 439—450.)

TRIANDRIA, DIGYNIA.

9. CALAMAGROSTIS. *C. arenaria. Arundo arenaria. Ang.* Sea mat weed, marram, helme, sea reed

Gen. Desc. Calyx a husk of two valves, containing one flower. Blossom hairy at the base.

Spec. Desc. Awn-less; *panicle* spike like; *leaves*, edges rolled inwards, pointed and thorn-like at the end; whilst growing sometimes flat with green and white streaks. *Spikes* four to six inches long, three-quarters of an inch broad. *Sea shore.* BLOSS. June, July.

Use. Planted on the sea shore, it is of much service in preserving the adjoining fertile lands; it grows only on the very driest sand on the shore, which it prevents the wind from dispersing over the adjoining fields, as happens frequently where this grass is not found. If the seeds of this plant had been sown upon the shore, many acres, now rendered useless by the sand, might have been saved from destruction. The Dutch have profited by the discovery of this circumstance.—*Linné.* On this account the extirpation of this grass was prohibited by Queen Elizabeth; and

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in Norfolk, according to Mr. Woodward, it is now planted on the flat coasts, to repel the sea. That gentleman observes that where it grows, a sand-hill immediately gathers round it, and he thinks that some of our sandy cliffs may have been thus formed. The manufacture of mats and ropes of this grass, is a principal article of trade at Newborough in Anglesea.—*Withering.*

10. CALAMAGROSTIS. *C. variegata, phalaris arundinacea.*

Ang. Painted lady grass.

Gen. Desc. As above.

Spec. Desc. Panicle large, loose strap-spear shaped, five to eight inches long, one to two in breadth, stiff and strong, varying in colour from white to pale green in the shade, in the sun to rich shades of purple and yellow, with large dark red anthers; *leaves* broad, flat, half an inch broad, and the variety cultivated in gardens beautifully striped green and white, sometimes purplish; straw simple. *Banks of rivers, ponds.* BLOSS. July.

Use. It is much used in some places for thatching ricks and cottages, and is more durable than straw. Cattle eat it, but as it is of a hard texture they are not fond of it. In the province of Scandia they mow it twice a year.—*Linn.* The oftener it is mown, the more acceptable it is to cattle.

11. AIRA. *A. cæspitosa.*

Ang. Turfy hair grass. Hassocks, rough caps, bull's faces.

Gen. Desc. Calyx two-valved; two-flowered, without any intervening substance between the florets.

Spec. Desc. Petals woolly, awned at the base; awn straight, short; *leaves* flat; *panicle* expanding, beautifully purple and silky, six or eight inches high and half as broad; trails on the ground sometimes to the length of several feet. *In moist meadows and woods.* BLOSS. June, August.

Use. The ashes burnt make a good manure. Its leaves are the coarsest and roughest of all the grasses growing in pasture or meadow grounds, and, unless forced by hunger, cattle will seldom touch them. It produces abundance of leaves, but few flowering straws, and has a very disagreable appearance in meadows, being apt to grow in tufts and occasion great irregularities on the surface, and occupying ground that might produce better grass. To get rid of it the land should be drained, and the tufts pared up and burnt.—*Mr. Swayne.*

12. ME-

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12. MELICA. *M. nutans. M. montana.*

Ang. Mountain melic.

Gen. Desc. Calyx two-valved; two-flowered, with a little substance on the pedicle between the florets; nectary one leaf; stamens dilated at the base.

Spec. Desc. Petals not fringed; *panicle* drooping, undivided, three or four inches long.

Use. In the isle of Rasa they make this grass into ropes for fishing nets, which are remarkable for lasting long without rotting.—*Pennant*, 1774, *p.* 297. Cows, horses, and goats eat it.

13. FESTUCA. *F. fluitans.*

Ang. Flote fescue grass.

Gen. Desc. Calyx two-valved; spickets oblong, roundish; husks tapering to a point or terminating in an awn.

Spec. Desc. Panicle branched, upright, very long, issuing from a long two-edged sheath; *spikets* nearly sitting cylindrical awnless; *blossom* awnless, mostly ten-flowered; *straw* striking root at the joints; *leaves* floating flat on the water. *In wet ditches and ponds, common.* BLOSS. June, September.

Use. The seeds, though small, are very sweet and nourishing. They are collected in many parts of Germany and Poland, and even brought to the tables of the great, under the name of *manna seeds*, as an agreeable and nourishing food, and are esteemed a delicacy in soup and gruels, upon account of their nutritious quality and grateful flavor.—*Lightfoot, Withering.* When ground to meal, they make bread very little inferior to that in common use, of wheat. The bran, separated in preparing the meal, is given to horses for the worms, but care must be taken that they are kept from water for some hours afterwards. Geese are very fond of the seeds, and well know where to seek them.—*Withering.* It is a good grass to sow in wet meadows, of a succulent and nourishing quality, and cattle are extremely fond of it, so much so that horses and swine will run risks to get at it.

14. AVENA. *A. nuda.*

Ang. Naked oat, pilcorn, pills.

Gen. Desc. Calyx two-valved; many-flowered; awn from the back of the blossom twisted.

Spec. Desc. Panicled; *calyx* three-flowered, shorter than the receptacle; *petals* awned on the back, third floret awnless. The seeds when ripe fall out of the husks. *Spikets* with two or three florets. Awn neither twisted nor jointed.

Panicle

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Panicle five to eight inches long, lower branches subdivided. Calyx and blossom ribbed. BLOSSOM, July.

Use. This is nearly as good as the cultivated oat; it serves to make gruel or oat-cake, and feeds cattle full as well.—*Withering.* It is cultivated in Cornwall, and sells there at the price of wheat.—*Ray.* It is cultivated also in the isle of Arran on the western side of Ireland.

15. ARUNDO. *A. phragmites. A. vallatoria, A. vulgaris.*
Ang. Common reed

Gen. Desc. Calyx two-valved; blossom awnless; surrounded with down at the base.

Spec. Desc. Calyx five-flowered; panicle spreading; *florets* four or five, smooth, but with down at the base arising from the spike-stalk. *Rivers, lakes, ditches.* BLOSS. July.

Use. The panicles are used by the country people in Sweden to dye woollens of a green colour. The reeds are much more durable than straw for thatching; they are used to lay across wood work, as the foundation for plaster floors, and to make garden screens against cold winds.

16. LOLIUM. *L. temulentum.*
Ang. Darnel. Annual darnel grass.

Gen. Desc. Calyx one leaf fixed, many-flowered; spikets alternate.

Spec. Desc. Spikets awned, compressed, many-flowered; *straw* rough when stroked upwards, and *leaves* rough when stroked downwards; *spikes* four to six inches long, rough; terminating spiket with a two-leaved calyx, and the lowermost spikets have a minute inner leaf to the calyx. *Ploughed lands, mostly among barley and flax, not common.* BLOSSOM, July, August.

Use. The seeds of this grass will intoxicate man, birds, and beasts; and, taken in any considerable quantity, will bring on convulsions and death.—*Lightfoot.* Mixed with bread corn, they produce but little effect, unless the bread be eaten hot; but, if malted with barley, the ale soon occasions drunkenness.—*Linné.* Made into bread with a small proportion of wheat, and eaten repeatedly, they produced vomiting, purging, violent cholics, and death. *Monthly Rev. vol.* lxvii. *p.* 559. Sheep are not fond of this grass.

17. ELYMUS. *E. arenarius.*
Ang. Sea lime grass.

Gen. Desc. Calyx lateral, two-valved, several together, many-flowered.

Spec. Desc. Spike upright, compact, long, woolly; *calyx*

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woolly, longer than the floret; *little spikes* two together, straight, two florets, awnless; *leaves* bluish green or whitish, rolled inwards, sharp pointed. *Sea-coast in loose sand.* BLOSSOM, July, August.

Use. This grass also is of much service in resisting the dispersion and spreading of the loose sand on the seashore. Probably it might be capable of being formed into *ropes,* like the *stipa tenacissima* in Spain.—*Withering.* Cows, horses, and goats eat it; sheep refuse it.

18. TRITICUM. *T. repens. Gramen caninum, gramen dioscoridis.*

Ang. Dog's grass, couch grass, squich grass, quitch grass, couch wheat.

Gen. Desc. Calyx two-valved, solitary, mostly three-flowered; floret bluntish.

Spec. Desc. Calyx four-flowered, awl-shaped, tapering to a point; *leaves* flat. *There are four varieties differing in the number of flowers of the calyx and awns. See Bot. Ar.*

Use. The root is the *grass-root* used in medicine; it is *diuretic* and *attenuant.—Hill, Lightfoot.* Boerhaave recommends the juice of these roots, drank liberally in obstructions of the viscera, particulaly in cases of schirrous liver and jaundice. Cattle are frequently found to have schirrous livers in the winter, and they are soon cured of them, when turned out to grass in the spring. Dogs eat the leaves of this grass to excite vomiting. At Naples, the roots are collected in large quantities, and sold in the market for the food of horses; they have a sweet taste, something approaching to that of liquorice; when dried and ground into meal they have been made into bread in years of scarcity.—*Withering.* This is a most troublesome weed in arable lands, and can only be destroyed by fallowing in a dry summer; but Mr. Pitt observes, that though this is the most common kind of *squitch* in gardens, that which is chiefly prevalent in arable lands, consists of other species of grasses, as the *agrostis,* the *holcus mollis,* and the *avena elatior. Staffordsh. Rep.* Horses eat the young leaves but leave them when fully grown; cows, sheep, and goats eat them.

TRIANDRIA ENNEAGYNIA.

19. EMPETRUM. *E. nigrum.*

Ang. Black berried heath, black crow berries, crake berries.

Gen. Desc. Male and female flowers on separate plants;

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Calyx three-div. bloss. three-petals; male, stamens long; female, berry with nine seeds.

Spec. Desc. Stems trailing; *bark*, scaling off, brown, inner, yellow; *bud* terminating, of five leaves; *leaves* in fours, three-square, on leaf stalks; *flowers* from the bosom of the leaves, sitting, solitary, sometimes *herm. calyx*, whitish, *petals* and *filaments* purple, *anthers* black. On the fertile plant *leaves* in fives, deep green, sitting, rolled back; *stem* redder; *petals* dark purplish red, *anthers* flesh colour, *pistil* black, *berries* brown black. *Mountains, high heaths, rocks, bogs, moors, frequent.* Bloss. April, May.

Use. Boiled with alum, the berries afford a fine dark purple dye. The Highlanders frequently eat the berries, as do children sometimes, but they are not a desirable fruit; and, if taken in large quantities, they occasion head ach. Grouse feed upon them. Goats eat the leaves, but are not fond of them; horses, cows, and sheep refuse them.

Class IV. Tetandria.

Tetandria, Monogynia.

1. Dipsacus. *D. fullonum.*

Ang. Teasel, manured teasel.

Gen. Desc. Calyx common, many-leaved; *proper* superior; *receptacle* chaffy.

Spec. Desc. Leaves sitting, serrated; chaff bent backwards; scales very hard.

Use. This plant is cultivated for the use of clothiers, who employ the heads with crooked awns to raise the knap upon woollen cloths. For this purpose they are fixed round the circumference of a large broad wheel, which is made to turn round, and the cloth is held against them. The plant flowers in June and July, and the heads are gathered in August.—*Withering.* The leaves of this plant are a good stomachic, but they are not much known as such.—*Hill.*

2. Scabiosa. *S. succisa. Succisa glabra. Succisa sive morsus diaboli.*

Ang. Scabious, devil's bit scabious.

Gen. Desc. Calyx common, many-leaved; *proper*, double, superior; *receptacle* naked, chaffy; *seed* wrapped in the proper case.

Spec. Desc. Blossom four-cleft, equal; (bluish purple, flesh coloured, or white, sometimes double) *stem* undivided; *branches* approaching; *leaves* egg spear shaped; *stem and leaves* rough with hair; *flowers* in globular cups;

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proper cup four-cornered, hairy, with four shallow clefts, the segments fringed with white hairs; *nectary* inclosing the germen, crowned with a concave glandular receptacle, armed with four or five strong reddish black bristles; each floret is besides furnished with a green spear shaped leaf, terminated by a white taper bristle. *In fields and pastures, common.* BLOSSOMS June, August.

Use. A strong decoction of this, continued for a good while together, is an empirical secret for *gonorrhœas.*—*Withering.* The dried leaves are used to dye wool yellow or green.—*Linné.*

3. SCABIOSA. *S. arvensis. S. pratensis hirsuta. S. major vulgaris.*

Ang. Common scabious. Field scabious.

Gen. Desc. As above.

Spec. Desc. Blossom four-cleft, radiating; *leaves* wing cleft, jagged, rough, spear shaped; *stem* rough with strong hairs, sometimes smooth, spotted with purple at the bottom; *flowers* sometimes white, purple, or blue, a little woolly; *proper cup* four-cornered, hairy, with four small teeth; *nectary* inclosing the germen, crowned with a concave receptacle, set with shining glands on the inside, and armed with eight or twelve spear shaped, serrated, greenish, bristly substances, hairy at the base. *Pastures and corn-fields.* BLOSSOMS July, August.

Use. This plant is slightly astringent, bitter, and saponaceous.—*Withering.* It is internally a pectoral, and its leaves are a common ingredient in decoctions of that kind. Externally it cures breakings out in the skin; the way of using it is boiling the juice to the consistence of ointment with lard.—*Hill.* Sheep and goats eat it, but horses and cows are not fond of it.

4. ASPERULA. *A. odorata. Rubeola montana. Aparine latifolia.*

Ang. Woodroof, woodrow, woodrovell, sweet woodruff, common woodruff.

Gen. Desc. Blossom one petal, funnel shaped; seeds two, globular, like cork.

Spec. Desc. Leaves from five to nine in a whirl, spear shaped; *flower* in bundles, on fruit stalks, of a beautiful snowy white; when magnified appears sprinkled with shining, frosted particles; calyx not evidently toothed; *fruit* covered with stiff hooked hairs; *panicle* with three divisi-
s; from five to ten inches high. *Woods, hedges, shady*
ces. BLOSSOMS May.

Use.

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Use. The scent of this plant is said to drive away ticks and other insects.—*Linné.* It gives a grateful flavour to wine. Horses, cow , sheep, and goats eat it.

5. GALIUM. *G. verum.*

Ang. Yellow lady's bed straw, cheese rening, petty muquet, yellow goose grass.

Gen. Desc. Blossom one petal, bell shaped, short; seeds two, nearly globular, beneath.

Spec. Desc. *Leaves* five to nine in a whirl, but generally eight on the principal stem, strap shaped, furrowed, smooth, rolled back at the edges; flower branches short; *blossom* yellow, segments greatly expanded, *styles* cloven deep; *stem* with large joints, cylindrical, scored, a little woolly. *Sides of fields and roads, frequent.* BLOSS. July, October.

Use. The flowers are prescribed by the French in *hysteric* and *epileptic* cases. They will coagulate boiling milk. Boiled in alum water they tinge wool yellow. The roots dye a very fine red, not inferior to madder, and are used for this purpose in the island of Jura.—*Pennant.* Sheep and goats eat it, cows are not fond of it, horses and swine refuse it. This plant is subject to a disease, in which the stem and branches are set with fleshy balls, about the size of a pea, hollow within, and covered with a purplish skin.

6. GALIUM. *G. boreale.*

Ang. Cross wort madder. Cross leaved goose grass.

Gen. Desc. *As above.*

Spec. Desc. *Leaves* four in a whirl, egg spear shaped, smooth, three fibred; *stem* upright; *blossom* numerous, beautifully white, but when dried turning to a dirty yellow. *Mountains in Westmoreland and Wales.* BLOSS. July, Aug.

Use. The roots afford a good red dye for woollen cloths.

7. GALIUM. *G. aparine. Aparine palustris. A. vulgaris.*

Ang. Goose grass, catch weed, cleavers, clivers, cleavers goose grass.

Gen. Desc. *As above.*

Spec. Desc. *Leaves* eight or ten in a whirl, strap spear shaped, rough above, smooth underneath, edges and keel set with prickles pointing backwards; *stem* four-cornered, angles set with prickles pointing backwards, joints woolly at the base; *blossom* white. *Hedges frequent.* BLOSS. May, June.

Use. It is said by Mayerne that three ounces of the juice of this plant, taken twice a day in wine, were found an useful *aperient* and *diuretic* in incipient *dropsies*; but it

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has been chiefly esteemed as an *antiscorbutic;* for this purpose, a tea cupful of the expressed juice is to be taken every morning for nine or ten days. When the fresh plant cannot be procured, it may be used in a dried state, as tea. Dioscorides speaks of an *ointment* made of the bruised herb, mixed with lard, as an useful application to discuss *strumous* swellings. A decoction of the plant is also said by him to have been found useful in the way of *fomentation,* in swellings of the glands of the neck, which followed a certain epidemic at Verona.—*M. M. L.* 3, *c.* 104. Dr. Cullen, however, says he has tried it in glandular indurations, without any advantage.—*M. M. ii.* 37.—*See also Med and Phil. Com. v.* 326. And, *Edwards's Treatise on the Goose Grass, &c.* Other species of galium have also been used for medical purposes, especially in *hysteric* and *epileptic* complaints.—*Woodville.* The expressed juice of the stem and leaves, taken to the amount of four ounces night and morning, is very efficacious in removing many of those cutaneous eruptions, which are called, though improperly, *scorbutic.* It must be continued for several weeks.—*Withering.* The branches are used by the Swedes for straining milk. Young geese are very fond of them. The seeds may be used instead of coffee. This plant is eaten by horses, cows, sheep, and goats; swine refuse it.—*Linné.* This plant has the effect of tinging with a florid d colour the bones of animals that feed upon it.—*Guettard, Mem. de l'Ac. de St.* 1746—7.

[To be continued.]

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

TEMPERATE discussion is always serviceable to science. In this point of view, Mr. Hume's Remarks on the Edinburgh Pharmacopœia, published in your last Number, are highly valuable. In this city, where the students are by no means disposed blindly to accept the doctrines of their teachers, or to esteem a work the more for being the production of a College, similar observations have been frequently made, and as frequently been replied to. Every thing connected with pharmacy is particularly interesting to me; I therefore have paid a good deal of attention

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tion to these discussions; and upon the whole, it appears to me, that the objections which have been made, have generally been the consequence of partial views, inattentention, or ignorance. But as Mr. Hume's very candid Observations are the first which have appeared in a publication, which will also admit a candid Reply, I shall take the liberty of answering them, principally with the views of exciting scientific discussion, and obtaining information.

Every one will regret with Mr. Hume, that so many differences, in every particular, exist between the Pharmacopœias of London and Edinburgh; but I do not understand how, upon this regret, he should engraft a general charge of want of precision and simplicity against either or both the Colleges. The charge to many will appear unfounded, and should not have been made without reasons to support it.

Much certainly remains to be done, before a Pharmacopœia shall be composed free from errors and numerous ambiguities; but Mr. Hume has been guilty of illiberality, in applying the epithet disgraceful to these errors and ambiguities, unless he is able either to point out how they may be avoided, or, what would be preferable, and undoubtedly the most advantageous employment both of Mr. Hume's time and abilities, to publish one himself, free from abiguity and error; his improvements could not fail to be acceptable to both Colleges.

Mr. Hume, however, seems to be diffident of his own abilities, and to despair of seeing perfection as well as uniformity in the Pharmacopœias, unless a deputation from each College be authorized to execute this important work. By such a measure, we might certainly procure an Imperial Pharmacopœia, in place of the London and Edinburgh Pharmacopœias; but as certainly, it would be less perfect than either. There is an old vulgar adage, "Many cooks spoil the broth;" and so would many Doctors the prescription. But I find that Critics can disagree as well as Doctors; and on this occasion shall screen myself by pitting one against another, and referring Mr. Hume to the concluding paragraph of the Edinburgh Review of the Edinburgh Pharmacopœia, vol. iii. p. 467. If Mr. Hume, after reading it, shall persist in his opinion, it will be incumbent on him to prove the practicability of his plan.—In attempting to do this, he may perhaps find some assistance in the Preface to Van Mons's Pharmacopœia, where he proposes, that at the peace there should be a conven-

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tion of deputies from all the states of Europe, to establish an uniformity of pharmaceutical practice over this quarter of the globe at least.

Mr. Hume now proceeds to his specific charges against the Edinburgh College. The first is, that we find the same name sometimes put adjectively and sometimes substantively, without any apparent intention; on the contrary, for obvious reasons, liable to lead into error. Now, his obvious reasons are no more apparent to me, than the intention of the College is to him; I must therefore request him to explain them. "The adjective, compositum, is applied at random in all its cases." Mr. Hume surely does not mean that the different cases of compositum are used at random! "Why tack it," says he, "to the tinct. cassiæ sennæ, and not to tinct. mimosæ catechu?" Because, in the latter case, catechu is the only active ingredient; and in the former, cassia is not the only active ingredient. Again, "Why tack it to pil. rhei; there is no other Formula with which these may be confounded?" There is not in the Edinburgh Pharmacopœia; but these pills are *compound*, and any other College, or any Hospital or Individual, may publish a Formula for simple rhubarb pills.

To all the objections to the introduction of the Linnæan and chemical names, there is this obvious answer, that Pharmacy is but the application of Natural History and Chemistry to a particular purpose, and cannot deviate from the language adopted in these sciences, without manifest impropriety. The verbosity, the great objection, I have no doubt will be gradually corrected by means of systematic abreviations. In all probability, Linnæus never ventured even to hope that his name would ever be introduced into Pharmacy; but I think that such a prospect would have afforded him the highest gratification. The remaining part of the sentence, "any farther than in Systems of Botany, Natural History, and in a few other similar productions, these names seem inadmissible," is, to me, unintelligible. The objection to the chemical names, that we might as well, in geographical description, substitute solution of muriat of soda, &c. for the word ocean, or oxyd of hydrogen for water, is frivolous. Oxyd of hydrogen has not been adopted by chemists for water, and geography is not a branch of chemistry.

Mr. Hume seems to be surprised at the title, emplastrum gummosum. What would he have it called? Mr. Hume tells us, that the conjunction et and the preposition cum,

are

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are often used very ambiguously; that in some instances they mean chemical combination, and in others mere mechanical mixture. The cum might, in general, have been avoided; but Mr. Hume's objection of inconsistency would only be relevant, if the College had pretended to use these words in any other sense than as mere copulatives. His objection to sulphas potassæ cum sulphure seems valid, but I much doubt that it is a sulphite of potass, for I have never been able to disengage sulphureous acid from it by means of sulphuric acid. The process and the substance itself have been retained, I have no doubt, in compliance with experience and prejudice. To Mr. Hume's questions respecting the oxidum antimonii cum phosphate calcis, the following answer may be given. We have no better or more explicit title. Pulvis algarothi mixed with phosphat of lime will not produce the pulvis antimonialis of the London College, because, although Mr. Hume apprehends it to be the most *uniform* oxyd of antimony, it is a submuriat and not an oxyd. That the Edinburgh title expresses the real constitution of the substance in question was proved by Mr. Chenevix. Flavus is perhaps an unnecessary epithet to the sub-sulphat of mercury. But in the substitute proposed for the whole title by Mr. Hume, he has given us a bad specimen of his skill in contriving unobjectionable names. Hydrarg. flavus would mean metallic quicksilver of a yellow colour. I totally differ from Mr. Hume in thinking that sub and super are unnecessary expletives; on the contrary, I think them a most material improvement, and from a subsequent criticism have some idea that Mr. Hume does not understand their application in chemical nomenclature. With regard to the comparative strength of crude and purified opium, I again disagree from Mr. Hume, for I consider all the processes used for *purifying* opium as processes for *spoiling* it. Mr. Hume tells us, that cerussa chiefly consists of carbonas plumbi; I very much doubt it. What he means by there being too much *play* on the word oxidum, I do not know; it is evidently much used, and with great propriety. The word *impurum* is used for the sake of truth, because the articles to which it is affixed are *impure*; and impure articles are admitted, because they are sufficient for the purpose, and because apothecaries, however they might charge their patients, would not be at the expence of procuring them pure. That there are many varieties of calamine, so far from being an objection is an additional reason for the use of the epithet Impurum. It is hardly possible to free

sulphat

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sulphat of zinc entirely from iron; but its presence is not injurious, and the acid is added because the sulphat of zinc employed by apothecaries contains oxyd of zinc in excess. With regard to the presence of sulphuric acid in the solutio acetitis zinci, Mr. H. is probably right; but the mode of preparing it is not only the most convenient, but the best. The reason, I apprehend, for retaining the two carbonats of iron is, that apothecaries will in general procure it from the trading chemists, while directions, by which it may be prepared in a few hours, may often be useful. I apprehend that no carbonic acid remains in the ammoniaretum cupri; what proof has Mr. H. to the contrary? Mr. Hume asks, if sub be properly added to acetis cupri, why is it not to acetis plumbi? I answer, simply, because the former is a sub-acetite and the latter is not.

Such, Gentlemen, are the arguments by which I have heard similar criticisms refuted when they have been the subject of discussion among my fellow students; and if they are not always satisfactory, they will at least show that much may be said on both sides. On the new Pharmacopœia, both with regard to its nomenclature and its substance, some observations worthy of notice will be found in the Review already mentioned; in Duncan's, jun. New Dispensatory; and in Murray's Elements of Pharmacy.

A STUDENT OF PHARMACY.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

NEARLY five years have elapsed since I first ventured to call in question the propriety of attempting to exhibit medicines *internally* in hydrophobia and tetanus, and more than two since I took the liberty a second time of protesting against the continuance of this most injudicious practice; or I should rather have said, *this ingenious mode of tormenting*;* but so imperfect was my knowledge of the true nature of the diseases at that time, that my objections were founded more on the horror expressed by this unfortunate

* See Medical and Physical Journal, vol. i. p. 447-9; vol. vi. p. 478-480.

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tunate class of patients (invariably in hydrophobia and very often in tetanus) at the sight of either food or medicine, and on the *uniform failure* of this method of treatment during a period of at least *two thousand years*, (a length of time much more than sufficient to shew that the plan was altogether improper) than on any correct ideas I could pretend to have formed respecting them; and the more I reflected on the subject, the stronger was my conviction of the necessity of *an entire change in our manner of proceeding*, before any progress could be made in the methodus medendi. Upon this ground it was that I recommended the external application of opium, as well as because it seemed well calculated by its property of diminishing morbid irritability, to counteract the most dangerous and distressing symptom (the spasmodic affection of the muscles, particularly those employed in deglutition) we have to encounter in these "*most dreadful of human disorders*:" But the plan I proposed has not, to my knowledge, been tried in hydrophobia;* and only in five cases of tetanus that I have heard of†, in some of which it was evidently useful, though its effects were not so decisive as I expected; indeed, in one case only has it been fairly tried, and in that it succeeded completely.‡ But long before this happened, my opinion had been, that our want of success in the cure of these maladies was more owing to the want of a systematic arrangement of the phenomena, and the judicious application of the knowledge to which such an arrangement would lead, than to any

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* Opium was applied externally in a case of hydrophobia that occurred in this town last summer; but cantharides and opium were given internally at the same time: electricity was also employed. As usual, the case terminated fatally.

† Of five cases of tetanus in which the opiate frictions were used, *four were cured*, but in all of them other means were employed at the same time, which renders it difficult to say precisely, what share of the merit was due to the former. Can it be shewn however, that an equal degree of success has attended the treatment of the same, or any given number of cases taken in succession, *where internal remedies alone were employed?* And does it not hold out a strong inducement to relinquish the use of internal remedies in hydrophobia; at least, until a rational theory of the disease shall have been formed, capable of directing us in the choice of more appropriate remedies than those in present use?

Frictions with opium and mercury are said to have been employed with advantage in tetanus two or three years ago, by Mr. Mursinna, at Berlin.—*Med. Journ.*

‡ Med. and Phys. Journal, vol. 6, p. 433.

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any other cause; and these ideas took such firm hold of my mind as to have led me to reflect, frequently and earnestly, on the ætiology and symptomatology of the diseases in question, and am inclined to hope some benefit may accrue to this department of medical science from my labours; indeed, I am greatly deceived if I have not found out a path which will, *if hydrophobia be remediable*, eventually lead to success. At any rate I have discovered (which is an acquisition of no small import, as it must certainly lead the way to a plan of proceeding totally different to those in common use, the necessity of which I imagine will be obvious) *why medicines administered internally, never did,* NOR NEVER WILL, SUCCEED *in subduing it.**

I shall not at present enter into a detail of the method I have pursued in prosecuting my inquiries, or the data on which my conclusions are founded: These, with a few remarks on the pathology of diabetes, and some farther observations on opium, may probably be published at my leisure, should the reception of the following be such as to encourage me to proceed.

The design of this paper is merely to announce to the Medical World, through the medium of your Journal, *the result of my inquiries,* (as some time may probably elapse before the whole will be ready for public inspection;) in doing which I shall purposely avoid entering into any reasoning on the subject, farther than is necessary to render what I have to say intelligible, and to enable your readers to reduce my ideas to practice, should they be inclined to think favourably of them. All I beg is, that they will not hastily condemn a scheme of practice, which appears to me, on the most mature deliberation, better calculated than any hitherto proposed, to subdue *the most terrific malady to which human nature is liable, and which has continued its ravages uncontrouled, from the earliest accounts we have of it, to the present time.*

Without farther preface, I shall proceed to state the principal conclusions at which I have arrived.

1. Hydrophobia and tetanus belong to the same natural class and order.†

2. The

* Undoubtedly, patients afflicted with *tetanus* do now and then struggle through the disease, though treated in the common way; but so seldom, as only to form an exception to a general rule.

† Dr. Cullen's classification appears to be correct, *as far as it goes;* but that of Dr. Darwin is preferable on some accounts.

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2. The remote cause varies according as the disease is idiopathic or symptomatic.

3. The predisposing cause consists in *an unequal and irregular distribution of the nervous or sensorial power*; the tendency to which is increased by external heat, debility in the muscular and other coats of the stomach and intestines, and of the involuntary muscles generally, impure air, &c. &c.

4. The proximate cause consists in *an exuberance and retrograde action of the faculties of the sensorium affecting the voluntary muscles.**

5. The proximate effect is the disease itself, which consists in *a spasmodic and retrograde motion of the fibres of the voluntary muscles.*

6. *In violent tetanus every voluntary muscle in the body is affected, as described in No. 5.*

7. *In hydrophobia, the spasmodic and retrograde motions specified in No. 5, are principally confined to the pharynx, the œsophagus, the larynx, the epiglottis, the tongue, and the muscles employed in deglutition*; (the stomach, though an *involuntary* muscle, is often affected in the same manner), *hence the characteristic symptom of the disease, horror at the approach of liquids or food; hence also the inefficacy and fatal consequences of administering medicines internally, and the cruelty of urging the patient to swallow liquids, &c.*† *There are also convulsive motions of the heart and arteries, evinced*

* There are some who refuse their assent to the doctrine of a retrograde action of the vessels altogether, though it is a fact as well established as any in Anatomy or Medicine; others there are, who admit that it may take place in the muscular coats of the stomach and intestines, but deny the possibility of its occurrence in the absorbents, on account of the valves being so numerous and strong as to support a column of mercury when injected after death; which, they say, must necessarily, and at all times, prevent a regurgitation of their contents; not considering that the valves are composed of muscular fibres and vessels as well as the absorbents, and that when the action of the absorbents is inverted, the action of the valves must be inverted also.

† To be convinced of the truth of this reasoning, we have only to turn our attention to *the relative situation* of the parts above mentioned, and to keep in mind *their natural action*, particularly that of the tongue and epiglottis, in the act of swallowing, and compare it with *the spasmodic and retrograde action* with which they are affected, and which render swallowing so difficult and dangerous in hydrophobia. We must also keep in mind the vicinity of the œsophagus and trachea, their similarity of form, the intimate connection that subsists between them in the offices they perform, and how apt parts so circumstanced are to take on the same kind of action; the sphincter vesicæ et ani, for example.

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evinced by the violent palpitations which often take place: At the same time the voluntary muscles belonging to the chest and extremities are variously and violently agitated and convulsed, (the nervous power in them being abundant, and its action retrograde, but less so than in spasm; the energy of the brain seems in some cases to be also increased:) *in some instances there is merely an increased action of the voluntary muscles;* * *in others the latter are affected, partially or generally, with spasmodic or retrograde action as in tetanus; all these circumstances contributing to produce that wonderful and horrible variety observable in the disease.*

Of the other symptoms, it will be sufficient to observe at present, that the principal ones, such as the lassitude, *the shooting pains preceding the attack of hydrophobia, from the part bitten upwards towards the head or heart, and never in a contrary direction,* the great depression of spirits, restlessness, *extreme sensibility to all impressions, the violent and long continued efforts to vomit* †, *the sense of suffocation, thirst, delirium; the vehement and incessant exertions to get rid of the saliva, the variable state of the pulse and respiration, &c. &c.* will be easily and fully explained on the principles laid down in No. 3, 4, and 5; and those which are yet to be brought forward.

The poison insinuated into a wound from the bite of a rabid animal, appears to exert its influence *principally if not entirely upon the nervous system;* though the size and depth of the wound, and the violence used in inflicting it, causing the skin and muscles to be more or less lacerated, seems to have some effect both in producing the disease, and in determining the duration of the interval between the bite and the accession of the disease. A good deal may also depend on the nervous system of the patient being more or less irritable.

What is the precise state of the inoculated part in the interval between the healing of the wound and the coming on of the hydrophobia; and how the poison operates in producing those changes in it which immediately precede the disease, are points which have not been explained; but I hope to be excused if I say, I do not consider them altogether inexplicable.

8. At

* As in the case described by Mr. John Hunter, where the patient was relieved by running round Smithfield. See Heads of Inquiry in the Transactions of a Medical Society, vol. i.

† See Hamilton on Hydrophobia, vol. i. p. 213—219.

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8. At the same time that certain parts of the system are affected as described in No. 6 and 7, there is *a deficiency* of the nervous or sensorial power in the *involuntary* muscles, *which is in proportion to the exuberance in the voluntary*; hence the vital and natural functions are carried on in a weak and inefficient manner, from the sensibility, irritability, and mobility; or in one word, the *contractility* of the parts employed in carrying on these functions, (namely the heart, arteries, muscular coats of the stomach and intestines) being greatly diminished. *And this is the reason why tetanic patients bear such enormous quantities of opium and wine, without experiencing the usual effects.**

It also shews why opium *taken internally*, inasmuch as it tends to increase this *want of contractility* in the muscular fibres of the alimentary canal, both by rendering them incapable of receiving, and the nerves which supply them of transmitting, the necessary supply of nervous power, must be injurious; *by lessening action where it ought to be increased*, namely, in the stomach, intestines, heart, and arteries; *and increasing it where it ought to be diminished*, namely, in the *voluntary* muscles.†

Thus it appears, that three different states of the nervous power subsist *at the same time; namely, an exuberance, a deficiency, and a retrograde action. The voluntary muscles are the seat of the first and third, and the involuntary of the second;* but whether the deficiency in the latter be the cause or the effect of the exuberance in the former, I shall not at present undertake to determine. I suspect however, it is sometimes the *cause*, sometimes the *effect* of the exuberance, and the consequent inordinate increase of the animal functions.

Another circumstance which constitutes *a leading feature* of hydrophobia and tetanus, and which will assist in explaining the variety already noticed, is, the great propensity in the nervous power *suddenly to shift its situation*, in such a manner as to cause *an exuberance* where there was *a deficiency* just before, and vice versa. This is clearly evinced by the sudden sensation of the convulsions or spasms in the voluntary muscles, and their being immediately succeeded by *violent palpitations of the heart, vomiting,*

* An insensibility to the action of opium frequently occurs in mania, and from a similar cause.

† This remark is, in general, more applicable to tetanus than to hydrophobia.

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ing, or retching; or by severe spasms about the throat; or by convulsive, spasmodic, or retrograde action in some of the other organs: but it seldom, if ever, happens, that *all* these symptoms are present *at the same time;* and for this plain reason, that whenever there is *an abundance* of the nervous power in one set of muscles, there is *a proportionable deficiency* in another set.

Suffocation is the most frequent cause of death happening so suddenly in these diseases, particularly in hydrophobia, from the spasmodic and retrograde action of the pharynx and œsophagus extending to the larynx, trachea, intercostal and other muscles of respiration, *so as to put an immediate and entire stop to inspiration.* But in many instances the patient falls back and dies instantly, on attempting to swallow either food or medicine; in which case a part of it probably enters the larynx and trachea, causing instant suffocation; owing to the tongue, and consequently the epiglottis, *being forced forwards,* when the glottis is of course left unguarded.

Another frequent cause of death, especially in tetanus, is, *the great monopoly and expenditure of the nervous power by the voluntary muscles, from the long continuance of the spasms; in consequence of which, the heart and large arteries do not receive a sufficient supply of this power to enable them to carry on their functions.*

9. The indications of cure, according to this view of the subject, will be clear and simple, viz. 1st. *to restore the balance in the distribution of the nervous or sensorial power;* and, 2dly, *the natural, that is, the* PROGRESSIVE *action of the muscular fibres.*

10. *No medicine, or combination of medicines, administered internally, can be adequate to the production of these effects.*

11. To restore the balance in the distribution of the n. p. which forms the first indication (No. 9) the superfluous or exuberant portion must be repelled *from the voluntary to the involuntary muscles,* (i. e. from the circumference to the centre) *which can only be done by some external application capable of giving a sudden shock to the system, so as to diminish the contractility of the fibres of the voluntary muscles, and also the mobility of the n. p.* in the nerves distributed to the latter; to be repeated oftener or seldomer, according to the violence and frequency of the spasms, which will*

* See Cullen's Institutes of Medicine.

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will be in proportion to the greater or less tendency to a return of the circumstances mentioned in No. 3 and 4.

12. *Cold water seems, a priori, well adapted to fulfil the ends proposed in No.* 11 *.

13. To restore the progressive action of the muscular fibres, which forms the second indication (No. 9), the water should be applied in such a manner as to pass over the body, *in a direction contrary to the morbid or retrograde motion of the fibres of the voluntary muscles; for which purpose, and also for that insisted on in No.* 10, *it should invariably be poured on the head and upper parts of the body,* (the patient being placed in an erect position supported by two assistants;) *but in every variety of the disease, the largest part, as well as the force used in applying it, should be principally directed to those parts of the body most affected with spasm:* for example, in hydrophobia or trismus, to the sides of the face, throat and neck; in opisthotonos joined with trismus, to the back, sides of the face and neck; and so in the other varieties. Two or three quarts, of a moderate temperature (perhaps about 40 of Fahrenheit) would be sufficient to begin with in an adult; gradually increasing the quantity to five or six gallons, and reducing the temperature, if that should be found expedient, as low as the freezing point; *care being taken to wipe the body dry with warm cloths immediately after, and to place it in bed between blankets till the warmth is restored, or the time returns for repeating the application* †.

Should this treatment occasion too great a depression of the powers of life, bladders of hot water might be kept in readiness to apply to the stomach, and bottles of hot water or warm bricks to the feet.

14. *The*

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* As a preparatory step to this treatment, and also to relieve the spasms about the fauces, cold water should be sprinkled on *the face, throat, and parts adjacent*, as often as the paroxysm returns. If this should be serviceable, the aspersion might be gradually extended to the chest, belly, and extremities, the body being wiped dry with warm cloths, and removed into warm blankets directly after. In many cases this will perhaps be as much as the patient will be prevailed upon to submit to.

† In a practice so new as is here recommended, and a disorder so unmanageable as hydrophobia, unforeseen circumstances may easily occur to defeat, not only these, but the most judicious plans art can devise; which renders it utterly impossible to lay down rules applicable to every case. It is highly probable this paper will be found to contain mistakes, both in theory and practice, as well as omissions, which it will be for experience to rectify and supply.

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14. * *The patient should on no account be urged to take either food or drink,* MUCH LESS MEDICINE, *as long as any difficulty in swallowing remains; nor should fluids of any kind be agitated in his hearing: on the contrary, every thing should be studiously avoided which is likely to excite any uneasiness or apprehension; for which reason he should be desired to ask, or if unable to speak, to express his wish by a sign, whenever he feels an inclination for refreshment.* At such times there would probably be no impropriety in allowing him to take his choice of such beverages as the following.

Lemonade; barley water sweetened with honey; gruel, or barley water, with wine, sugar, and spice; mulled wine, or good negus; beef tea, broth, &c: and a saline draught with lemon juice in the act of effervescence, once in two or three hours.

15. Principally to procure stools, but partly with a view to nourishment, glisters made of gruel, sugar, butter, and salt, should be injected every three or four hours, till the former effect is obtained †. Should they fail, and the patient be able to swallow with ease (which sometimes happens in tetanus) half an ounce of castor oil should be given in two or three spoonsfull of tartarized infusion of senna, or in any of the above mentioned liquids, every three or four hours, until the bowels are relaxed.

With a view to *the prevention of hydrophobia,* excision should *never* be omitted when the wounded part is so situated as to allow of it; and instead of limiting this operation to a few days after the accident, as is usually done, I should be inclined to perform it at any distance of time *under two years,* (the disease having appeared as late as nineteen months‡;) or even when the patient begins to complain, *provided the pain and discolouration be confined to the bitten part, and no dread of liquids has taken place.*

But where, either from a dislike to the knife, or the wound being so situated as not to admit of its use, this practice

* This caution is as necessary to be attended to in tetanus, *when the spasms extend to the parts contained in the throat and fauces,* as in hydrophobia.

† Two or three drachms of tincture of opium might be added to each glister, should the motions of the stomach be retrograde: but it sometimes happens the sphincter ani is strongly contracted, and the introduction of a pipe has the effect of bringing on the spasms, in which case they must of course be omitted.

‡ Trans. Med. Soc. V. 1, p. 304.—Ham. V. 2, p. 134.

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practice is not adopted, the *pure water of kali* should be carefully and diligently applied, as soon after the accident as possible.

As a prophylactic, *a shower bath*, used two or three times a week for a few months, seems far preferable to bathing either in fresh or sea water, both for preserving that *equilibrium* in the distribution of the nervous power, which is so essential to health, and also for preventing a *retrograde action* of the vessels *: to which should be added, *gentle* exercise on horseback, a light nutritious diet, with the occasional use of such laxatives as increase the peristaltic motion of the intestines.

After the commencement of the disease, the wounded part being painful, and excision not having been performed, I see no impropriety in destroying the life of the part, by applying a pledget spread thick over with the calx cum kali puro, and a poultice afterwards.

The analogy subsisting between hydrophobia, tetanus, hysteria, and diabetes, leads me to believe, that a method of treatment somewhat similar to the above, may be of use in the latter. In the early stage of the disease, before the retrograde action of the absorbents is firmly established, I should expect great benefit from the judicious use of *a shower bath*, together with a saline draught in the act of effervescence, every four or five hours, and bitters and laxatives occasionally; joined with a diet consisting principally of animal food.

I have not time to enlarge on this subject now; but it may not be amiss to throw out a few hints and cautions, should any of your readers be inclined to adopt the plan.

If the disorder be recent, and the patient's strength not much reduced, it might be proper to begin with water of the heat of the atmosphere; but if of long standing, and the patient be weak and hectical, the temperature of the water should be at least 60 of Fahrenheit the first week of using it; and should be reduced a few degrees every week; but if at any time he complains of being shivery and weaker after using the bath, the water should be made a little warmer a few times afterwards, and should never be reduced so low, if it can be avoided, as to cause these inconveniences.

Secondly, As soon as the patient is able to bear it, the

* May not the good effects of cold affusion in fever be explained upon these principles?

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cold affusion should be used *instead of the shower bath*, gradually increasing the quantity of water; and if this agrees, after using it once a day for a short time, and the progress towards recovery is slow, it might perhaps be applied twice a day with advantage: *but the temperature of the water, and the frequency of its application, should always be adapted to the feelings and strength of the patient, the state of the weather, &c.* The proper time for applying it will be in a morning, as soon as the patient rises, or mid-way between breakfast and dinner; and at five or six in the afternoon, should it ever become expedient to apply it twice a day.

Thirdly, The patient should be in *an erect posture* whenever the shower bath or the cold affusion is made use of, and should stand on a board raised and made a little convex, with grooves and perforations to prevent the water accumulating about his feet.

Fourthly, He should be rubbed dry with warm cloths, and wrapped in a warm blanket immediately after using the bath or affusion.

Simple and self-evident as some of these precautions may seem, they are of more consequence than at first sight may appear; indeed, the success of the scheme will depend in a great measure on the manner in which it is executed.

For instance, the cold affusion was lately recommended by me, in a case of diabetes in an elderly man, after every thing else had been tried in vain.

The temperature was to be reduced, five degrees daily, from 60 of Fahrenheit to the freezing point.

The first application felt grateful to the patient; the second, of 55, too cold; the third, of 50, still more so: he complained of being chilly and weaker, and of having more abdominal uneasiness after than before. And well he might, for it proved on inquiry, that he was placed in a sitting posture (so that his legs and thighs would escape being wet) during the affusion; his body was not even wiped afterwards: he was allowed to put on his clothes, and then to go to bed without the sheets being removed.

These inconveniences might possibly have been avoided had the above directions been enforced; but in this case they had not been given to the person who superintended.

I am, &c.

Manchester, May 12, 1804. M. WARD.

To

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To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE following Case occurred to me at Lazaretto Barracks, Minorca, while Assistant Surgeon to the First Battalion of the Fortieth Regiment of Foot. As it exhibits a singular cause of profuse Epistaxis, I am induced, though at this distant period, to offer it for publication in your useful Journal.

I am, &c.

JOHN HENNEN,

Surgeon, third Division of Light Infantry.

Strabane, April 20, 1804.

WILLIAM STANNION, a private of the regiment, aged 25, was seized in the month of July, 1800, with violent pain in his forehead, in the site of the frontal sinusses; it was not constant, but when it did occur, which was generally at night, it usually lasted for three or four hours and was attended with violent hæmorrhage from the nose, which though frequently recurring, seldom lasted longer than ten minutes, and was constantly preceded by a sharp lancinating pain in the affected part. On the tenth day from the first attack, the common remedies of his comrades being insufficient to check the bleeding, he for the first time applied to me; I recognized him for an old patient, who had been under my care about two months before, while on the passage from England, in a very protracted case of typhus mitior, the most troublesome and obstinate symptom of which was pain in the same situation as that he now complained of, which continued long after every febrile symptom had dissappeared, and was attended with occasional amentia. Viewing his case as the effect of the intense heat acting on a weak habit, predisposed to congestion of blood in the head, a predisposition favoured by the pressure of his military accoutrements, I ordered him to remain as much as possible in the shade, to have his head frequently bathed in cold water, and I administered a gentle laxative, and introduced a dossil of lint dipped in solution of allum into the nostril of the right side, through which the blood flowed

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with most violence. This treatment however was found to be insufficient, the hæmorrhage increasing, and great debility coming on; I therefore had recourse (on the fourth day after being consulted) to the injection of water artificially cooled by means of a solution of neutral salts. In a few minutes after its use, he felt something moving violently in the cavity of the nose, which gave him exquisite pain, and shortly after a substance resembling a clot of blood was discharged; he immediately uttered an exclamation of joy, saying he was relieved from most intense torture, and the hæmorrhage ceased altogether in about an hour. I, in the mean time, was occupied in examining the substance discharged, which, to my astonishment, as well as that of Mr. Bolton, the surgeon of the regiment, and my friend Mr. Woods, assistant of the second battalion, proved to be a leech, enveloped in coagulated blood; it was of the common size, and its motions were lively. I washed off the gore, and applied it on the hand of one of the hospital attendants; it readily fastened, and was not removed before it had produced the effects usually looked for from animals of its class, procured in the more common course of things; it survived this last effort twenty-four hours. From the history of this case, there cannot be a doubt of the animal discharged having been the cause of the hæmorrhage, and as little can be entertained of its having been in the cavity of the nose fourteen days at least previous to its removal. I shall not attempt to prove the exact time of the animal's residence in my patient's body, I would only observe that the barracks where he lay were at least three hundred yards from the sea, and that no fresh water, lake, or stream, was nearer than ten miles; nor indeed from every research that I could make, (which from my situation I confess was limited) could I ascertain that the leech is common in Minorca, though, according to Dr. Cleghorn, it is a native of that island. The patient never had a return of the epistaxis for eighteen months that I remained in the regiment; he recovered his health rapidly, and, except once that he had a venereal affection, at Ricasola, Malta, he never was afterwards in the sick report, nor was he unusually affected by the excessive heat of the island.

CASE

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Case of Fistula Lacrymalis.

Communicated by Mr. H. Crump, *of Albrighton.*

THE subject of the disease was a young woman of tolerable good health, but rather disposed to strumous affections, ætat 19; she had for three months laboured under a painful affection of the right eye, with slight inflammation, and a particular fullness of both eye-lids. The tears now and then passed over the cheek, which she could not account for, and then a distressing heat and dryness of the nostril on the right side came on, which was soon relieved when the tears took their proper channel.

I directed some leeches to be applied under the lower eye-lid, and the use of a saturnine lotion, c. tinct. opii, and a poultice at night made with crumbs of bread moistened with a strong decoction of poppies. This treatment was persisted in for a fortnight; the pain had entirely left her, as well as the inflammation and thickening of the eye-lids. The leeches were applied three times. (The *tarsus* on both lids were the parts most inflamed, especially at the inner canthus and *puncta* lacrymalia.) She now considered herself well, and I did not see her again for a month, when I was called to her to treat the same complaint. I found her under very different circumstances, the disease much aggravated; instead of an occasional flow of tears over the cheek, they were constantly oozing from the puncta and dribling down the cheek. Pain in the eye, inflammation of the lids, and thickening of them had returned, with heat and dryness of the nostril. The lacrymal sac now, was much distended, so much so that the tumour was evident at some distance; pressure soon emptied it, the tears escaping at the puncta, but in a very short time it filled again.

Topical bleeding was again used, with the same application, varying them a little; however, she reaped no benefit from the bleeding, nor any of the applications used; and, as her constitution began to suffer from the constant source of irritation being kept up, I gave her decoct. angustur. c. acid. nitros. which she benefitted much by; the pain was relieved by the occasional exhibition of opiates. I now thought the case promised fair for the success of an operation, especially as the obstruction in the canalâ nasali had recently taken place, which induced me to attempt the cure in a way I have seen Mr. Astley Cooper practice (when a pupil of his) in Guy's Hospital, and

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which I shall now attempt to describe. A common sized blunt probe being bent, giving it such a course as to take the direction of the lacrymal canal, was cautiously introduced under the inferior turbinated bone, passing it on till the head of the probe became fixed in the duct, using no force till I was sure the probe was in this situation, which is very soon known, especially by one that has ever introduced it; I then depress the point of the probe, in order to elevate the blunt end, and if the obstruction is not great it will pass forward to the extremity of the duct, and even into the sac itself, which was the case with my patient. When I found the probe had reached the sac, after remaining a minute, I withdrew it; the sac then, which was before distended, forming a large tumour, was soon closed, the contents taking the course of the duct. I continued introducing the probe once a day for a fortnight, which I am happy to say completed the cure. It may be necessary to observe, that after the five first introductions of the probe a free hæmorrhagy followed; I then, in a few days, observed it covered with pus, and at length mucus only, when I considered the canal perfect. My patient has now been well six months, and has never suffered the least inconvenience in the part since, nor did she take any medicine after the first introduction of the probe.

I would recommend Students in the dissecting-room to practice the introduction of the probe in the above way, on the dead subject; a few trials is sufficient to make any one expert at it, having previously dissected the parts, and thus become acquainted with the direction of the canal.

I shall, in a short time, trouble you with an account of a case of strangulated scrotal hernia, which I operated upon with success, after a stricture upon the intestine for six days; during which time, distressing symptoms were present.

May 11, 1804.

To Dr. BRADLEY.

Sir,

EVERY effort to extend the practice of vaccination is certainly laudable. The obligation conferred on society by those who labour to promote it, is beyond the bounds of calculation. But, Sir, the old adage, *est modus in rebus*,

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should be held in view, by all who address the public on this important subject. The pages of your excellent Journal are not confined to medical eyes only. As they have been the great vehicle of information, respecting the Jennerian discovery, they are to be found in the apartments of the mother, who wishes to screen her offspring from the horrors of the small-pox, as well as the surgeon or physician: Surely, then, she must turn with a sickened eye from the first paper inserted in your Journal, for the present month; besides, this paper contains no information which has not been given before. If you will turn to Dr. Jenner's first publication on the variolæ vaccinæ, you will there find (page 6) the following sentence: "During the progress of the disease, the lips, nostrils, eye-lids, and other parts of the body, are sometimes affected with sores; but these evidently arise from their being *rubbed or scratched with the patient's infected fingers.*" This part of the history of the cow-pox was undoubtedly mentioned, not only to point out a law in the agency of the vaccine matter on the animal œconomy, but to guard the inoculator against surprize at an occurrence similar to that which came under the observation of Mr. Coley; and I feel assured, both you and that gentleman will pardon the liberty I take in this suggestion*. I am, &c.

May 14, 1804. G. C. JENNER.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IN the Remarks on the pustulous eruptions of animals, which you did me the favour to insert in the last Number of your Journal, there is a considerable error; the second paragraph, relative to the disease of turkies on the coast of Barbary, being put before the first. I therefore request, that the passage may be reprinted as follows:

"I am informed by Major Magra, who resided six years

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* The public have a reliance on receiving, through the medium of our Journal, every kind of information respecting the progress and effects of this important discovery; and Mr. Coley's case, we believe, will *co-operate* with Dr. Jenner's observations in *guarding* mothers from beholding "with a sickened eye," Mr. C's paper, because he has developed the true source of these unusual appearances. Ed.

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years at Tunis, in the character of His Majesty's Agent and Consul General, that the same disease prevails among turkies on the coast of Barbary. Their heads swell, and are affected with pustulous eruptions, and they become blind. The disorder is supposed to be infectious."

"Major Magra was told it was the small-pox, and that it always proves fatal. He landed twelve turkies from Sicily, and they all died. It is impossible to breed them at Tunis, although fowls are very plenty there."

I am, &c.

New Street, Hanover Square,
May 19, 1804.

JOHN RING.

LETTER I.

Of Quacks and Empiricism.

WHEN prejudice is become general and sanctioned by time, to eradicate it is an Herculean task; but as your Journal has been the medium of diffusing science, and of appreciating medical fact, I am encouraged to hope that neither you nor your readers will deem a few pages misapplied, in the admission of some cursory remarks on empiricism; a subject which affords an ample revenue to the state, gives a bias for medicine in the community, and ultimately tends to promote the interests of the profession, by exciting and extending this propensity, and which rather increases than diminishes the number of patients of the regular practitioner, as quack medicines are generally calculated to amuse without curing the sick.

Imagination is the most active passion of the mind, at the same time it is one of the least stable; so that the persons most addicted to quackery are, such as are under the influence of more imaginary than real disease, the nervous, hypochondriac, and hysteric. They are objects, however, of compassion, and their sensibilities demand pity. They find solace in variety, and their minds are soothed and charmed by novelty; the benevolent will therefore be disposed to excuse and indulge them in a propensity so conducive to mental comfort. The greatest relief, indeed, is experienced by the medical professor, who is tired with importunity to remove imaginary evils, or to subscribe to unnecessary and unavailing recipes.

There is, in the human mind, a love for novelty and a predilection for the marvellous. It is predominant in moral and sometimes even in virtuous pursuits, hence the enthusiasm

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enthusiasm in religious, and the ardour in politics; the first to the excess of mania and suicide, and the latter to deliberate murder by duelling. It is not surprizing therefore that the love of the marvellous should extend to objects that respect health, when so many flattering promises (however fallacious) are held up to the desponding invalid, whose weakness leads him to credulity, and his distempered imagination to hope and confidence.

A circumstance highly conducive to quackery is, the overflowing wealth of this country. Persons of fortune sufficient to enable them to live without industry, (which is itself a disease, or the parent of disease) frequently fall into a state of ennui, which would become insupportable, were it not that in moral, as well as in physical evils, a disease when it shall have arisen to a certain extent, fortunately tends to cure itself; hence the privileged orders, those exempted from labour by their affluence, attempt to ward off the consequent evils, by cards, plays, parties, clubs, public breakfasts, public dinners, and nocturnal amusements; others, of a more hypochondriac temperament, enjoy the luxury of novels and patent medicines, and after satiety has been gratified by variety, occasionally repose upon regular practitioners, till the doctor, wearied out by importunity, and the patient by imaginary or real maladies, reverts to new nostrums, or by visiting fashionable watering places, dissipates care, and diverts ennui, at least for a season.

It is not my intention at present to convey the reader to times of yore; but I have lived to have known a distinguished group of quacks, whose names and remedies are now scarcely remembered; or if the latter are recollected, it is to mark the loss of their celebrity. Ward, about the middle of the last century, still lives in recollection, by the formulæ of medicines, bequeathed to a charitable purpose; whilst he was a prominent character, lived a Dr. Ryan, an obscure physician, of merit and abilities; but without professional character himself, he was the means of raising that of Ward, by giving or rather selling to him his nostrums, and by which Ryan must have raised a considerable sum, as he assured me he received two hundred pounds for his white drop alone. Soon afterwards Le Fevre from Liege appeared as a blazing star, and in a few months realized in this credulous country about ten thousand pounds, by pretending to cure the gout, a delusion he carried on by giving small doses of white vitriol. Although he was ignorant of medicine, he possessed the common

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common sense to know that the gout makes its attack principally in the spring and autumn, on which account he commenced his operation in the spring period, when the violence of the attack would be naturally receding, and he had the prudence to quit England (carrying home his fortune) before the autumnal return of the disease.

Some empirics have succeeded by the fascination of a title to a nostrum, thus the Ephractic Pill of the Dispensary, afforded a fortune to Dr H. by vending it under the name of the Female Pill, whence of course it must be inferred to be applicable to the case of every female. Daffy's elixir, was the old elixir salutis, now tincture of senna. Godbold's syrup is honey and vinegar, the composition of which was known before Godbold was born, as the simple oxymel of the shops.

In Surgery, quackery has been extended with equal profit to the empiric, although perhaps with more injury to the patient. A few years ago, Capt. *** came from America, with the patronage of numerous recommendation of being able radically to cure cancer; and although he never cured one, he is said to have pocketed ten thousand guineas of devoted English dupes.

This afforded encouragement to a more recent adventurer, a pupil of Dr. Rush, and really recommended by him; and whose reputation was so high in cancer empiricism, as to induce a lady here to offer him one thousand pounds to cross the Atlantic as a douceur. Weak minds are apt to estimate the value of an object by the difficulty of acquiring it; and the eclat of a single patient, although no advantage could be gained, except by the American adventurer, suddenly raised his reputation, and acquired him a fortune, which the sagacity of his countrymen never would have conferred.

After this general coup d'œil of the empirical field, I shall descend to particular characters, and introduce my second letter with some account of the celebrated Dr. Day, should you approve the first address of your constant reader.

IETROS.

London, May 20, 1804.

Account

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Account of Diseases in an Eastern District of London, from April 20, to May 20, 1804.

ACUTE DISEASES.		Amenorrhœa	7
Peripneumonia	2	Dyspepsia	5
Catarrhus	5	Vomitus	2
Measles	3	Procidentia Vaginæ	1
Rheumatismus Acutus	4	Herpes	4
CHRONIC DISEASES.		Rheumatismus Chronicus	13
Tussis	13	PUERPERAL DISEASES.	
Tussis cum Dyspnœa	17	Peritonitis	3
Hydrops Pectoris	4	Menorrhagia Lochialis	5
Pleurodyne	5	Rhagus Papillæ	4
Anasarca	5	Mastodynia	6
Ascites	4	INFANTILE DISEASES.	
Ophthalmia	3	Aphthæ	3
Fluor Albus	14	Convulsio	2
Menorrhagia	12	Herpes	2
Chlorosis	5	Vermes	4

The present state of disease does not offer any thing new or very interesting to the medical inquirer. Catarrhs and other affections of the chest still continue. These, which generally constitute a large proportion of the disorders occurring in the winter, or in the earlier months of the spring, have been continued later than usual in the present season. This has proved a discouraging circumstance to some who are subject to an annual return of these complaints, but who generally observe them to retire at an earlier period of the year, and are therefore ready to infer, that instead of being periodical, their complaints will become continual. Their continuance, however, may be ascribed to the very frequent and sudden changes of temperature during the period referred to. The degree of heat prevailing in the early months of the spring, induced some persons to expose themselves to the danger of catching cold, either by a change in their clothing, or by placing themselves in a current of air, which, however pleasant and refreshing, has been the occasion of producing a relapse, or protracting their disease.

CRITICAL

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CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

An improved Method of treating Strictures in the Urethra; by THOMAS WHATELY, *Member of the Royal College of Surgeons, in London.* 8vo. pp. 230. London, 1804.

(Continued from our last, pp. 475—478.)

"When the bougie has reached the anterior part of the stricture, it should rest there for a few seconds, that the caustic may begin to dissolve. It should then be pushed very gently forward, about one-eighth of an inch; after which there should be another pause for a second or two. The bougie should then be carried forward in the same gentle manner, till it has got through the stricture. The sense of feeling will generally inform the operator, when it has proceeded so far. But here we are to have recourse likewise to the notch in the bougie, as a guide; which, when the point of the instrument has fairly passed through the stricture, will generally be seen near the orifice of the urethra.

"In the greater number of cases, in which the caustic is thus applied, even in the first instance, it gives but little pain at the time of its application. A slight scalding in making water, and a trifling discharge during the first day or two, are, however, commonly produced by it. But it must be observed, that the mildness of these effects is entirely owing to the small quantity of caustic employed.

"At the expiration of seven days, the application of the caustic should be repeated in the same manner. If the first application should have enlarged the aperture of the stricture, which may be known by passing a bougie through it, of the same size as that by which the caustic was conveyed, the bougie used in the second operation should be a size larger than the one used in the first, taking care, however, that this be not too large to pass through the stricture. But if the passage shall not have been enlarged by the first process, the second must be carried on by the same sized bougie as was before used. If the patient felt no pain under the first operation, a piece of kali, a small degree larger than was used before, may be selected for the succeeding attempt. But if the first application gave pain, there should be no increase made in the quantity of caustic. At the end of seven days more the caustic should be repeated a third time. At this and all future applications

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of it, the bougie, upon which it is applied, should be increased in size, in proportion as the aperture of the stricture dilates, the better to effect the dilatation. Every succeeding bougie should pass with some degree of tightness through the stricture, and be moved backwards and forwards several times, either slowly or more quickly, as the patient best can bear, till the caustic is dissolved. The operation should be repeated in this manner till the contracted part of the urethra is dilated, if possible, to the natural size, which is generally practicable in recent strictures. In those of longer standing, we should make the attempt, and carry the dilatation as far as it can be done with safety. We are, however, on no account to increase the quantity of caustic, as we increase the size of the bougie.

"On account of the extreme activity of this remedy, and the certainty with which it destroys the organization of the part it touches, it is necessary to fix upon a maximum or determinate quantity, which we should not venture in any case to exceed. Without this precaution, great mischief may result from its application; as some patients have so little irritability, as to be able to bear much larger quantities of it, without any sensible inconvenience, than it would be prudent to use. On this account, as well as from a wish that the remedy should act only on the surface of the stricture, without destroying its substance, I do not in any case apply more of the kali purum at a time than a piece about the size of a common pin's head; and even this quantity cannot be borne where the habit is very irritable. It would be difficult to weigh such small portions of the article. In order, therefore, to convey a clear idea of the different quantities to be used, I shall here represent them by three dots of different sizes, thus, • . . and to give further assistance on this important point, I find that twelve bits of the largest size weigh one grain."

The succeeding chapter contains Mr. W's method of applying *lunar caustic* to strictures, as recommended in his former work; for he by no means wishes this remedy to be superseded by the new one, as different cases require different treatment.

"There are, (says Mr. W.) as has been before stated, some cases in which the contraction is so irregular, and its aperture so untowardly situate, that a bougie cannot readily, if at all, be passed into it; other cases have likewise been described, in which it is impossible to pass a bougie through the strictures. If, in the former of these cases, a bougie, furnished with the kali, cannot be passed *into* the stricture, or if it get through the stricture, and yet do not destroy the irregularity, and it becomes necessary for this purpose to apply a caustic at the extremity of a bougie to the anterior part of the contraction, I should certainly prefer the lunar caustic to the kali purum. In cases of the latter description, the lunar caustic, for the reasons already assigned, ought always to be fairly tried in the same way, previous to the use of the kali purum.

"The lunar caustic should be used in every case, in a determinate

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nate quantity, upon the extremity, and partly upon the shoulders of a common bougie, which has previously had the curvature of the urethra given to it. The following is an improved method of arming a bougie with this caustic. Take a given quantity of powdered lunar caustic, e. g. the twelfth part of a grain, put it upon a bit of flat glass, then take a very small quantity of thick mucilage of gum arabic upon the point of a pen knife, (about the quantity of a large pin's head to a quarter of a grain of caustic is sufficient) mix the caustic and mucilage together. If the quantity of mucilage be nicely adapted to that of the caustic, it will almost immediately form a paste, which may be taken up from the glass on the point of a knife. In about half a minute this will become so stiff, that it may be rolled into a pill, without adhering to the fingers. In this state it should be put immediately upon the end and shoulders of the bougie, and without delay so moulded upon it, as to become perfectly smooth, like the extremity of the bougie. The operator's finger and thumb will mould the paste, and his thumb nail will smooth its surface, or it may be polished by gently rubbing it on the glass. But this must be done expeditiously, otherwise the paste will become so hard as to be incapable of being thus moulded."

"The bougie may likewise be prepared in the following manner: The liquid paste of caustic and mucilage, when first mixed, may be immediately put upon the extremity of the bougie from the point of the knife, and, as it hardens, may be coated upon it, partly by one of the fore fingers, and partly by the knife. This paste hardens so quickly, that by the following day it will be too firmly fixed on the bougie to be easily separated from it.

"When a bougie, thus armed, is applied to either of the kinds of stricture I have just mentioned, it should be of as large a size as the urethra will admit. When it arrives at the strictured part, it should be pressed against it with a moderate degree of force, till the caustic is dissolved, which it will be in a minute or two.

"The quantity of caustic employed in the first operation, should not in any case exceed the sixteenth part of a grain. At the second and third operation, the twelfth part of a grain may be used, if the quantity first employed gave but little pain. If, after this, no progress is made in opening the stricture, the quantity of caustic may be gradually increased to the eighth, the sixth, or if the patient bear the preceding quantity very well, even to the fourth of a grain at each application. But the increase should be made with a very cautious hand, and in no case ought we to exceed the quantity last mentioned. In those who are young and healthy, it may sometimes in these cases be repeated to advantage every five days; in other cases, however, a week, or even less frequently, will be sufficient. In making an addition to the quantity before used, we should attentively regard the effect produced by preceding applications; should these have produced pain and irritation, with a frequent desire to make water; or hæmorrhage, even of the slightest kind; we must not even repeat the caustic, much less

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less increase its quantity, till these effects have entirely ceased. As a proof of the necessity of keeping an attentive eye on the effect of former applications, I may inform the reader, that I have seen an instance, where only the twenty-fourth part of a grain of this caustic produced great irritation."

The remaining part of the volume contains observations on the danger, suffering, and consequent inconvenience of Mr. Home's method of applying caustic to strictures; to which succeed a competent number of cases to illustrate the use of both remedies.

There is also an APPENDIX, on a peculiar affection of the bladder in elderly people.

In our opinion, all sufferers from strictures in the urethra, as well as surgeons in general, are much indebted to Mr. Whately for the important improvements he has made in this branch of the profession.

Three Letters on Medical Subjects: addressed to the Rev. Gilbert Ford, Ormskirk, Lancashire. By JOHN FORD M. D. *Chester.* London, pp. 55. 1803.

THE first and principal part of this little publication is no more a subject for medical criticism than the advertisements of the fashionable empirics of the day. It will only excite some surprize, that a regular physician should depart from the line of professional respectability, in thus advertising a secret medicine prepared under his own inspection, and taking pains to satisfy the world that the secret will remain in the family, unimpaired, after the death of the inventor.

The next subject is, remarks on the use of granulated tin as a vermifuge, and as a medicine of general activity in relieving the intestines from indurated fæces long retained. Besides this well-known power of tin filings, the author attributes to it, when used in large doses, a peculiar sedative operation in checking hæmoptysis, and in quieting various powerful nervous impressions on the mind, without being attended with the same inconveniencies that follow the use of opiates. With this view Dr. F. particularly advises the tin to be employed in the latter stages of pregnancy, when the mind is often peculiarly anxious and irritable, and when at the same time, a state of costiveness ought to be carefully avoided. A sedative power has, we believe, never been before attributed to this remedy; if well founded, possibly it may be owing to the lead with which the tin in common use is generally alloyed in a small proportion, and which may have a sensible operation in the large doses employed by the author.

In an appendix is added the following process for preparing the *hydrargyrus cum magnesia* or *mercurius alkalizatus.*

" Take of purified quicksilver, the finest and cleanest manna, of each one ounce. Rub them well together in a stone mortar, until the mercurial globules entirely disappear, which will be in a few

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minutes, adding a few drops of water if necessary, and afterwards as much more as will reduce the mixture to the consistence of a thick syrup or treacle. With this, incorporate, by trituration, one drachm of magnesia, and add a pint of tepid water.—After the mercury has subsided, pour off the clear liquor, and add another pint of tepid water as before; and decant it off after the subsidence of the powder: To this powder add three drachms of magnesia, and as much water as will reduce it to the consistence of an electuary.— After a little trituration, put the mass upon filtering paper, and dry it with a gentle heat, breaking it now and then to expedite the drying. When it is *thoroughly* dried, add two drachms of gum arabic in powder, and mix them well in a stone mortar."

This method of using manna for the extinction of the mercury, and afterwards washing it out, leaving the metal combined with the earth, appears to us a real improvement, and worthy of attention.

Elements of Materia Medica and Pharmacy. By J. MURRAY, *Lecturer on Chemistry, and on Materia Medica and Pharmacy.* 2 vol. 8vo. pp. 746. Edinburgh, 1804.

THIS work is divided into three parts: the first treats of pharmaceutic chemistry, or of those parts of general chemistry that relate to pharmacy; the second contains a classification of all the subjects of the materia medica, with a summary view of these properties and the chief modes of combination in which they are employed; the third part is the pharmacopœia, or rules for the preparation of the different medicines, chiefly from the last edition given by the Edinburgh College, collated with the London Pharmacopœia, together with remarks on the rationale of each prescription where any thing occurs worthy of notice.

We shall give a short view of each section.

The part devoted to pharmaceutical chemistry begins with a slight sketch of the chemical elements, some of which can only be introduced for the sake of uniformity, as they have no connection with pharmacy. The author, with propriety, enlarges on the analysis of vegetable matter as more peculiarly relating to the preparation of medicines. He very justly enforces the important distinction between the proximate and the elementary principles of vegetables, and shews that the business of the pharmaceutical chemist altogether relates to the former, not the latter.

The proximate principles being described, the methods of separating and preparing them for use, and the re-agents necessary for this purpose, are thus enumerated.

"From this enumeration of the proximate principles of vegetables, we may perceive the reasons for those pharmaceutic processes to which plants are usually subjected.

"By infusion in water, we impregnate the fluid with the gum, sugar, extract, tannin, saline substances, part of the essential oil, and part also of the resinous principle. The aroma of the plant is

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generally first taken up: by longer infusion the water is loaded with the colouring astringent and gummy parts: these are also most abundantly dissolved when the temperature is high. Hence an infusion differs according as the water has stood, longer or shorter, on the materials, and according as it has been promoted or not by heat. An infusion made in the cold is in general more grateful, while one made with heat, or by keeping the fluid long upon the materials, is more strongly impregnated with active matter.

"By decoction or boiling, the solvent power of the water is still farther increased; and hence the liquor always appears darker coloured, and is, in fact, more loaded with the principles of the vegetable which it can hold dissolved. The volatile parts, however, particularly the essential oil, are entirely dissipated; and therefore it is an improper process for those vegetables whose virtues depend, wholly or partially, on these parts. Even the fixed principles of vegetables, at least some of them, are injured by long decoction. The extractive matter, for instance, gradually absorbs oxygen from the atmosphere, and is converted into a substance nearly insipid and inert. Opium, Peruvian bark, and many other vegetables, are injured in this manner by decoction, especially if the atmospheric air is freely admitted; and these two circumstances, the dissipation of the volatile matter, and the oxygenation of the extractive, considerably limit the application of this process. It is still used, however, with advantage, to extract the mucilaginous parts of vegetables, their bitterness, and several other of their peculiar qualities.

"Alkohol may be applied to vegetables to extract those principles which are not soluble in water. It dissolves entirely their essential oil, camphor, and resin; and as these are often the parts on which the virtues of vegetables depend, these solutions, or tinctures, as they are termed, are often active preparations.

"Equal parts of alkohol and water, in general, extract still more completely the active matter of plants, as we thus obtain a solution of all those substances which are separately soluble in either of these fluids.

"When by the action of one or both of these fluids, we obtain a solution of the active principles of a vegetable, the solution may be evaporated to the consistence of a thick tenacious mass. This forms what is termed an extract: it is termed an aqueous extract when obtained from the aqueous infusion or decoction of a plant, and spirituous when alkohol has been the solvent. The design of this preparation is to obtain the active matter of the vegetable in a small bulk, and in such a state that it may be preserved a long time without suffering any alteration. It is evident, that it is a process which can be properly applied to such plants only as have their virtues dependant on some of their fixed principles, and even these are often injured by the heat employed, and the free access of the atmospheric air.

"Distillation is another process applied to vegetable substances,

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by which we obtain some of their active principles, particularly their essential oil. If the vegetable matter be heated along with the water, the oil is volatilized, alongst with the aqueous vapour: it separates from the water on being allowed to remain at rest; a part of it, however, is also dissolved, and communicates to the water a considerable degree of flavour, and often also of pungency. This forms what are termed distilled waters. If alkohol be used instead of water, the essential oil is completely dissolved in it, and we thus obtain what are termed distilled spirits."

The oxygenation of the solutions of those substances which liquid menstrua are able to extract from vegetables, has been supposed by several chemists to impair their medicinal virtues. Mr. M. is of the same opinion, and he gives the example of the decoction of cinchona in illustration.

"From an accurate analysis of it, (the cinchona) it has been proved that seven parts out of eight of it consist of woody fibre, or of a matter inert and insoluble, which cannot act on the system, and which affects the stomach only by its weight and insolubility. The remaining eighth part is that in which the activity of the medicine resides: it is therefore evident that if this be extracted, without injuring its activity, the medicine could be exhibited with much more advantage. This is in part accomplished by the preparations of it that have been mentioned; but even these do not convey it in all its force. If one ounce of the bark be infused or boiled in a certain quantity of water, the infusion or decoction is not nearly equal in efficacy to the whole quantity of bark operated on. It is therefore evident that during either of these operations, the active matter of the bark has not been entirely extracted, or has suffered some change. And here chemistry lends her assistance, and still farther elucidates the peculiar nature of this substance, and the changes produced in it by these processes. It has been proved by experiments, that the matter on which the power of the bark depends, has a strong attraction for oxygen at a temperature moderately increased; that during the infusion, and particularly during the decoction of that drug, this active matter absorbs oxygen from the atmosphere, and is converted into a substance insipid, and inert. This leads to the improvement of the preparations of this medicine; and experiments instituted for the purpose have accordingly proved, that, while by long boiling the virtues of the bark are nearly totally destroyed, they are fully extracted by a few minutes decoction in covered vessels. The same investigations have pointed out the nature of the action of some other substances on bark, formerly not well understood. Thus, it has been found by experience, that the alkalies, and more particularly magnesia, enable water to extract the virtues of bark, more completely by infusion—a circumstance elucidated by the fact since discovered, that the extractive matter of the bark, to which its activity is owing, combines with facility with these substances, and forms soluble compounds."

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The author's classification of medicines is in some degree different from his predecessors, principally indeed by following the simplifying system of Brown with very scrupulous accuracy. The author's table of classification is the following.

"A. General Stimulants.

	a. Diffusible.	Narcotics.
		Antispasmodics.
	b. Permanent.	Tonics.
		Astringents.
B. Local Stimulants.		Emetics.
		Cathartics.
		Emmenagogues.
		Diuretics.
		Diaphoretics.
		Expectorants.
		Sialagogues.
		Errhines.
		Epispastics.
C. Chemical Remedies.		Refrigerants.
		Antiacids.
		Lithontriptics.
		Escharotics.
D. Mechanical Remedies.		Anthelmintics.
		Demulcents.
		Diluents.
		Emollients.""

All that has been said or can be said on the subject of stimulant and sedative, in the present state of human knowledge, has long been exhausted; we shall therefore abstain from entering into this controversy, but we must make a single remark on the mode in which the author introduces this arrangement to his readers. He observes, that "the systems of classification of the articles of the materia medica, which are founded on their sensible qualities, their chemical compositions and properties, or their characters as objects of natural history, are extremely defective. They associate substances, which, as medicines, have little resemblance, and separate others which are intimately connected.

"As the study of the materia medica is merely the study of the medicinal properties of certain substances, it is evident that the method of arranging them, as they agree in producing effects on the living system, is the one best calculated to fulfil all its objects.

"The foundation of the classes being similarity of operation, those substances are arranged together which have the closest resemblance in medicinal power, and although, when the extremes of the classes are considered, substances may sometimes be found associated which appear to be little connected, yet this can never be so much so as in the other systems of classification, and the connection

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nection, though apparently remote, may always by slight gradations be traced."

Classification is so good a thing in itself that an indifferent one is perhaps better than none at all, for experience will sooner or later correct the errors of defective system; but if similarity of operation is to be the basis of a classification of materia medica, we know not where in any of the other systems will be found a more palpable violation of this principle than in the present, which includes, under the same head, alcohol, tobacco, and digitalis.

The description of each individual article of materia medica is brief, accurate, and as comprehensive as is compatible with the limits the author has allowed himself. The following will serve as a specimen:

"Angustura is a bark imported within these few years from the Spanish West Indies, the botanical characters of the tree producing it being unknown. It is in flat pieces, externally grey and wrinkled; internally, of a yellowish brown, and smooth; has little flavour; taste, bitter and slightly aromatic. Water, assisted by heat, takes up the greater part of its active matter, which does not seem to be injured even by decoction. Alkohol dissolves its bitter and aromatic parts, but precipitates the extractive matter dissolved by water. Proof spirit is its most proper menstruum. By distillation, it affords a small quantity of essential oil. The powdered bark, triturated with lime or pot-ash, and water, gives a smell of ammonia.

"Angustura is a powerful antiseptic. It was originally introduced in the West Indies as a remedy in fevers, equal or even superior to the Peruvian bark. In this country it has been principally used in obstinate diarrhœa, and in chronic dysentery, and with advantage. Its dose is from ten to twenty grains of the powder, or one drachm in infusion or decoction. Its tincture with proof spirit in a dose of one or two drachms has been used in dyspepsia."

Among the remedies supposed to act merely chemically, and whose operation is not essentially connected with the state of the living fibre, the author includes the class of refrigerants. Their modus operandi has long been a matter of dispute; the following chemical explanation of it is here given.

"Keeping in view the very inconsiderable action of these remedies, it may perhaps be possible, from the consideration of the mode in which animal temperature is generated, to point out how their trivial refrigerant effects may be produced.

"It has been sufficiently established, that the consumption of oxygen in the lungs is materially influenced by the nature of the ingesta received into the stomach; that it is increased by animal food and spirituous liquors, and in general by whatever substances contain a comparatively small quantity of oxygen in their composition. But the superior temperature of animals is derived from the consumption of oxygen gas by respiration. An increase of that consumption must necessarily, therefore, occasion a greater evolution

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tion of caloric in the system, and of course an increase of temperature, while a diminution in the consumption of oxygen must have an opposite effect. If, therefore, when the temperature of the body is morbidly increased, substances be introduced into the stomach, containing a large proportion of oxygen, especially in a state of loose combination, and capable of being assimilated by the digestive powers, the nutritious matter received into the blood must contain a larger proportion of oxygen than usual; less of that principle will be consumed in the lungs, by which means less caloric being evolved, the temperature of the body must be reduced; and this operating as a reduction of stimulus, will diminish the number and force of the contractions of the heart.

"It might be supposed that any effect of this kind must be trivial, and it actually is so. It is, as Cullen has remarked, not very evident to our senses, nor easily subjected to experiment, and is found only in consequence of frequent repetitions."

The contents of the third part of this work have been mentioned to be a translation of the new Edinburgh Pharmacopœia, with an addition of those preparations of the London College that are peculiar, or differ essentially from the former. To some of the metallic and saline preparations, suitable remarks are added on the rationale of the operation. Under the *pulvis antimonialis*, Mr. Chenevix's new method is given; but the author adds, (what we believe to be perfectly well founded) that neither this nor the antimonial powder of the College is precisely the same as the celebrated empiric preparation which they profess to imitate.

The dangerous nomenclature now adopted by the Edinburgh College for calomel and corrosive sublimate, is here noticed.—Mr. M. prefers the old distinctions of *corrosivus & mitis*.

The first appendix to these volumes contains a very short view of the medical history of the gasses, of electricity, and Galvanism.

In the second appendix a few remarks are given on the method of composing medical prescriptions, with a table of doses.

"The following are the principal circumstances to be attended to in forming a prescription.

"1*st*, Simplicity should be attained, as far as is consistent with the objects of the prescription. Nothing ought to enter into the composition which does not add to its virtue, render it less ungrateful, give it a convenient form, or which is not necessary to conceal any particular ingredient; and, in general, the practice of accumulating a number of articles in one prescription is to be avoided.

"2*dly*, Substances, it is evident, ought not to be mixed together, which are capable of entering into chemical combination, or of decomposing each other, unless it be with a view of obtaining the product of the combination, or decomposition, as a remedy.

"3*dly*, Those mixtures are also to be avoided, in which one medicine, by its peculiar action on the stomach or general system,

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modifies and changes the action usually exerted by another, unless where the object is to obtain the effects of that modified operation.

"*4thly*, The error of contra-indication is to be guarded against, or those medicines ought not to be combined, the virtues of which are not merely different, but are, in some measure, opposed to each other.

"*5thly*, The ingredients which are to be mixed, must be such as will mix properly together, so that the form in which the remedy is designed to be exhibited, may be easily obtained and preserved.

"*Lastly*, The form under which a medicine is prescribed, must be adapted to certain circumstances; principally to the nature of the disease, the nature of the remedy itself, and, as far as may be possible, to the taste of the patient.

An experienced apothecary might fill up these outlines to great advantage: as they now stand, they scarcely deserve a place.

Tables and an Index conclude the work.

An Essay, Medical, Philosophical, and Chemical, on Drunkenness and its Effects on the human Body; by THOMAS TROTTER, M. D. &c. &c. 8vo. pp. 203. London, 1804.

THIS Essay is a translation, much enlarged, of Dr. T's Thesis, which he defended for his degree at Edinburgh, in 1788. It continued very popular among the students for several years, on account of the novelty of the subject, its own merit, and particularly the concise and pointed encomium of Dr. Cullen, who was his public Examiner at the Graduation. It is the custom in this truly liberal University for the Professor who examines the candidate in public, to address him in a short speech on the subject of his Thesis, in order to take off the embarrassment that a young man must feel on commencing the defence of it in Latin, before a large audience, a majority of which are good judges of what they hear, and this too against an able and eloquent Professor, who speaks Latin as fluently as English. Dr. Cullen commenced his address on this occasion in the following words, which did the candidate no less honour than his degree, "Hanc de ebrietate dissertationem non ebrius scripsisti."

Dr. T. introduces his subject by a general statement of its importance, and the neglect it has experienced among medical writers.

"Mankind, ever in pursuit of pleasure, have reluctantly admitted into the catalogue of their diseases, those evils which were the immediate offspring of their luxuries. Such a reserve is indeed natural to the human mind; for of all deviations from the paths of duty, there are none that so forcibly impeach their pretensions to the character of rational beings as the inordinate use of spirituous liquors. Hence, in the writings of medicine, we find drunkenness only cursorily mentioned among the powers that injure health, while the mode of action is entirely neglected and left unexplained.

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This is the more to be wondered at, as the state of ebriety itself exhibits some of the most curious and interesting phænomena that are to be met with in the history of animated nature. The potent stimulus of vinous spirit, as if by magical influence, so disturbs or operates on the animal functions, that new affections of mind, latent or unknown before, are produced; and the drunkard appears to act the part of a man of deranged intellect, and altogether foreign to the usual tenor of his sober reflections.

"But a long train of the most dangerous diseases are the certain consequence of habitual intoxication: the body and mind equally suffer. Sudden death, apoplexy, palsy, dropsy, madness, and a hideous list of mental disquietudes and nervous failings, prey upon the shattered frame of the inebriate, and prove fatal in the end. These sufficiently point out the subject as highly important in a medical view, and worthy of the nicest investigation. But as I have not any precursor in my labours, nor example in the records of physic, to direct my steps, I shall need the less apology for the manner I mean to pursue; and must claim indulgence where I appear singular in my method.

"In order to treat my subject philosophically, and for the sake of method, I propose dividing it into the following heads, viz.

"1st. Definition of drunkenness.

"2d. The phænomena, or symptoms of drunkenness.

"3d. In what manner vinous spirit affects the living body.

"4th. The catalogue of diseases induced by drunkenness. And,

"5th. The method of correcting the habit of drunkenness, and of treating the drunken paroxysm.

"Under these heads I shall occasionally introduce such practical remarks as may arise out of the subject, but which are too desultory for methodical arrangement.

When Dr. T. comes to treat of the way in which the health is undermined by intoxication, he is naturally led to consider the operation of *narcotics* in general upon the human body; and here he cannot avoid the question, so much agitated, respecting the *stimulant* and *sedative* powers of these substances. He defends, at considerable length, the opinion which seems to be most generally received, viz. That these poisons *may* be always so administered as to be *stimulant* in the first instance, and so as not to be *perceptibly* sedative in their *secondary* effects; they may, on the contrary, be so administered, that the stimulant effect may not be perceptible, and the sedative one truly alarming, if taken in immoderate doses. That in moderate doses they are all stimulant.

Among the most remarkable effects of ebriety is the power it gives of resisting *cold* and *contagion*.

"The drunkard is found, in the first stage of the paroxysm, to resist the operation of cold. No stronger proofs of this need be adduced than what are daily observed among our seamen in the naval sea-ports. These men are permitted to come on shore to recreate themselves; but, from a thoughtlessness of disposition, and the

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the cunning address of their landlords, they drink till the last shilling is spent; they are then thrust out of the door, and left to pass the night on the pavement. It is surprising how they should escape death on such occasions; for I have known many of them who have slept on the street the greatest part of the night in the severest weather. Nothing but that hardiness of constitution peculiar to the British seamen, which braves every danger, could survive such extremes of cold.

"The following fact is a strong instance of the inebriate resisting cold. A miller, very much intoxicated, returning from market late at night, while it snowed and froze hard, missed his way, and fell down a steep bank into the mill-dam. By the fright and sudden immersion, he became so far sensible as to recollect where he was. He then thought the surest way home would be to follow the stream, which would take him within pistol-shot of his own door. Instead, however, of taking that course he waded against the current, without knowing it, till his passage was opposed by a wooden bridge. This bridge he knew; and though he felt some disappointment, he still thought his best way was to follow the stream, for the banks were steep and difficult to climb. He now found himself in a comfortable glow; turned about, and arrived at his own house at midnight, perfectly sober, after having been nearly two hours in the water, and often up to the breech. He went immediately to bed, and rose in perfect health. — As the senses were recovered at the time he got home, it is probable he could not have resisted the cold much longer. This instance tends to confirm a common observation, that sudden immersion in cold water puts a speedy end to intoxication."

[To be continued.]

MEDICAL AND PHYSICAL INTELLIGENCE.

To the EDITORS of the MEDICAL and PHYSICAL JOURNAL.

Gentlemen,

YOU have fallen into a very great error in your critique of my "Researches into the Properties of Spring Water," and I am confident you must wish that the correction of it should be as widely diffused, through the medium of your Journal, as the error itself. You suppose that I attribute the inefficacy of the sulphureous test to detect lead dissolved in common water to the very *small* quantity which it can take up. Thus you say, "The author concludes with giving the chemical experiments which have enabled him, as he

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he supposes, to detect lead, in *minuter proportions*, than any hitherto known method has been able to do. Again, where the quantity is too *small* to be indicated by the test, &c." But this is entirely to misconceive my meaning, even my words, (See Researches, p. 19) and the object of my experiments. It is not the *smallness* of the quantity, but the *mode of combination* which causes the metal to escape the action of preparations of sulphur, which in the case of this particular solution are no tests at all. In two examples I have shewn, that by a little preparation, the whole body of the water became tinged by sulphurated hydrogen, though this same substance produced no discolouration previous to the preparation. (See p. 165. G). As there is not the smallest reason to think, that the solutions in these specimens were stronger than usual, it is probable, that in all cases there is lead enough to produce an evident discolouration, were it not that the mode of combination prevents the union of the metal and the sulphur. What this mode precisely is, it is not easy fully to demonstrate. A very learned friend conjectures, that the lead is dissolved galvanically. I have offered a different hypothesis, of which I shall be very little tenacious, if a better can be proposed. The weakest possible solutions of common salts of lead, as the acetite, nitrate, &c. are discoloured by sulphurated hydrogen, which is so delicate a test, that it would be ridiculous to ascribe diseases to quantities of this poison, so small as not to be detected by it, on this account only.

I am glad of this opportunity of doing justice to Dr. Withering, by correcting a mistatement of my own. I have said, (p. 32) that no instances are on record of saturnine colic having been excited by these peculiar solutions. But I find in Dr. Withering's "Account of the Foxglove, (case 52) two instances of colics, which he attributed to the water of leaden pumps; besides a third case of an ill state of health, from what had been supposed an irregular gout, ascribed by him to the same cause. Dr. Withering did not at all suspect, that the metal could be dissolved by the water: on the contrary, he expressly says, "Perhaps, in this instance, the metal was so minutely divided by abrasion, as to be mechanically suspended in the water." However, the cases are told in such a manner, as to shew that this eminent physician suspected such water to have deleterious properties; and I am very happy to find my own opinion sanctioned by so grave an authority.

Fourcroy, in the Connoissances Chimiques, (sect. vi. art. 17), has cited some experiments of M. Luzuriaga, to prove that by agitating lead with common water in contact with air, carbonate of lead is formed, which the water dissolves; and adds, that the solution may be discovered by hydrosulphurets. These conclusions are in direct opposition, not to my experiments only, but to those of Bergman, of Baker, and Heberden. But it may be useful to discover the cause of such opposite results; and still more to collect, at some future time, as large a body of evidence as possible

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sible, on a subject which is obviously of the first interest to society. I shall be obliged, therefore, to any of your correspondents, who will point out where the experiments of M. Luzuriaga are to be found.

WILLIAM LAMBE.

King's Road, Bedford Row, May 7th, 1804.

ROYAL JENNERIAN SOCIETY for the EXTERMINATION of the SMALL-POX.

The Anniversary Dinner of this Society was held this day, May 17, 1804, (being the birth-day of Dr. Jenner) at the Crown and Anchor Tavern, in the Strand, at which were present about three hundred members; his Grace the DUKE of BEDFORD, President, in the Chair.

After the healths of their Majesties and of all the branches of the Royal Family, the Patrons of the Institution, which were drank with enthusiasm; that of the immortal discoverer, and of the noble promoters and friends of his discovery, were received with heartfelt ardor.

Mr. Travers, jun. recited, in a very excellent stile, an extract from a poem, written by Mr. R. Bloomfield, called *Good Tidings, or News from the Farm*, which was greatly applauded.

The report brought up by Mr. Travers, sen. and most impressively delivered by him, afforded the highest gratification to the philanthropic and benevolent supporters of the discovery, which forms a new æra in the history of medicine, and which, originating in our isle, already carries consolation to every quarter of the globe.

He gave an account of the great exertions that had been made by the Society, and the very liberal contributions of many noblemen, gentlemen, and ladies. Among other facts, he stated, that by the influence of vaccination, communicated through the medium of the different Societies, the annual deaths from the small-pox had been materially diminished. Through this Society, in co-operation with others, the vaccine system had been propagated in Asia and America. At Constantinople a house had been opened for the purpose of Vaccination; and the Turks, although so much averse to innovation, had embraced the system with the greatest eagerness. In India, the Hindoos, from their religious veneration of the cow, had most materially benefited by this mode of inoculation, and he might almost assert that millions had already been saved by vaccination. In America, the Canadian Indians came down the country many hundred miles to get the matter; and thus whole tribes escaped the effects of that malignant and fatal distemper, the small-pox.

Mr. Travers afterwards stated, that thirty-four persons were now on the establishment of the indigent blind, of whom no less than fourteen owed their blindness to the small pox; and it was to be hoped

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hoped that by the introduction of vaccination, that institution would ultimately be rendered unnecessary.

The numbers inoculated by the Society in the first year of its establishment were 8333. The persons and places, extending to every quarter of the world, furnished with matter from the central house alone (which has always been done free of expence as well there as at all their stations) amounted nearly to 3000, which had been supplied with 7048 charges or packets. And it is worthy of remark, that in no single instance has the matter furnished by this institution been found to produce a spurious disease. In consequence of this success, medical practitioners in many parts of the United Empire, more especially in the neighbourhood of Portsmouth, in Yorkshire, and the west of Ireland, have lately become particularly desirous of being supplied from thence.

The resident inoculator (Dr. Walker) also made a short report, which gave great satisfaction. He stated the contents of letters he had received from several ladies of distinction and clergymen, who, in their respective neighbourhoods, had successfully introduced the benefits of vaccination by means of virus which he had sent them. Reports were also received from the Jennerian Societies, which correspond with that of the metropolis; and others are rapidly multiplying in different parts of the empire.

COW-POCK INOCULATION.

On Monday, April 30, ult. there was a most respectable and agreeable Annual Meeting of the Governors of the Original Vaccine Pock Institution, No. 44, Broad Street, Golden Square, established January 1800. Before dinner the Earl of Cholmondeley, the President, being in the chair, the Continuation of the Report was read of the Investigation of the Laws of Agency of the Vaccine-Pock Matter, and of the Practice and Proceedings of the Institution, as written by the Physicians, Drs. Pearson, Nihell, and Nelson.

Among the resolutions were:

1. That the thanks of this meeting be given to Drs. Pearson, Nihell, and Nelson, for their able Report.

2. That this Report be printed under their direction.

3. That the thanks of this Meeting be given to the whole of the Medical Establishment for their gratuitous services.*

Till the Report be printed it may be interesting to our Readers to lay before them an extract relating to the effect of the new inoculation, in diminishing the mortality of the small-pox, concerning which such contrary statements have been published by persons either unacquainted with the facts, or from self interest.

One of the objects of this Institution has been to furnish instruc-

* Not one of the medical officers receive any pecuniary reward; on the contrary, they are all among the most liberal subscribers, from themselves and from their friends, as appears by the printed list.

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tions for the practice of Vaccination; and this has been done by shewing patients to visitors and students, and by public lectures, as well as by written and printed papers. This establishment has accordingly disseminated the new inoculation through many parts of the world. By this time its instructions and matter have introduced the Vaccine Inoculation in New South Wales, as it did before in Paris, Vienna, &c. &c.

It may be expected from the extensive practice of vaccination, (this institution alone having vaccinated and been the immediate means of vaccinating 60,000 persons) that the fatality of the small-pox must have been diminished. That diminution however does not appear, for the Bill of Mortality for London reports 1202 to have died in the year 1803, whereas 1111 died in the year 1799, 522 only in 1797, and 1040 in 1795; and although the number has been greater in the intermediate years, yet, still the number last year, viz. 1202 is not much less than the mean number for each year during any five years for half a century past.

How it has happened that no diminution of mortality is yet perceived may easily be understood, when it is considered that the number inoculated for the cow-pock are chiefly those who would have been inoculated for the small-pox, and that therefore the same proportion remained for the natural small-pox. Hence, hitherto, vaccine inoculation, like the small-pox inoculation, is only a benefit to individuals; but this benefit is very much greater than the variolous inoculation, although the variolous inoculation, by preventing the natural small-pox, was, till the vaccine inoculation, the greatest benefit in Physic.

Prejudice, indolence, ignorance, want of opportunity, still occasion inoculation of either kind to be but partially adopted in society at large. How far laws might be established, or means be found out, for every person within a certain period after birth being inoculated, cannot be discussed on this occasion, however important this question may be for the legislature.

After dinner, the President being obliged to attend the House of Peers, the following statement was delivered by Lord Petre, one of the Vice Presidents.

The grand object of this Institution on its establishment, a little more than four years ago, was, to extinguish the small-pox by substituting for it the inoculation of the cow-pock; but however great the obligations of the public were to Dr. Jenner, the promulgator of the leading practical fact in 1798; to Dr. Pearson also in 1798, and to Dr. Woodville in 1799, for their investigations to justify the new inoculation, still a professed Institution was wanting, in order to,

First, Extend by gratuitous inoculation the history of the vaccine pock, of which, comparatively, but little was still known.

Secondly, To diffuse the knowledge of the new practice.

Thirdly, To preserve a succession of patients for matter for the use of the public.

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To what extent the first of these designs, may be judged from the report published in a former year, and from the papers distributed containing directions for inoculation, and will be judged of further by the report this day read and ordered to be printed.

With regard to the second part of this plan, the diffusing the knowledge of the new inoculation, the practice has been publicly carried on twice a week ever since January 1800, at which a great number of practitioners and many students have been present for instruction.

Institutions, confessedly upon a similar plan, have been established in other places, and instructions for the practice have been disseminated in every part of the world.

With regard to the third part of the plan, the succession and the supply of matter; as might be supposed, the numbers inoculated during the years 1800 and 1801, were not considerable. However, a register has been kept, and more or fewer cases have been registered twice a week from January, 1800, up to the present time; thereby affording a body of evidence of very nearly 2000 patients, which have been subjects of observation during this space of time. Such a long and uninterrupted course of observation, we apprehend, has no where else been pursued; the advantages of observation of even half a dozen patients a week for 200 to 220 weeks successively, over any greater than the total number here inoculated, but in a few months or weeks, can well be conceived by those who have ever been employed in observation, and need not be explained.

It appears that not less than 12,000 parcels of matter have been furnished by this institution, and thereby it is estimated fairly, that not fewer than 60,000 persons have been vaccinated with matter directly from this institution, besides an incalculable number from those so vaccinated.

The whole pecuniary expence for these benefits does not amount to much more than three hundred pounds per annum; and although the subscriptions are voluntary, and mostly of small annual sums, and although the institution has sustained great expences and pecuniary losses, chiefly from unfortunately parting with money on a loan, and from being obliged to change their house from the practice, yet there is a surplus of five hundred and fifty pounds stock in the funds, and a respectable balance in the hands of the banker; what is surprising is, that many have received from this institution a reward to submit to the test of small-pox inoculation, and others have been relieved who were in distressed circumstances; hence it is concluded, that there is not to be found an example of even nearly so much benefit to individuals and society at large, at so small an expence. However, although it be very true that, provided the present subscribers be permanent, the income will be adequate to the present expenditure, it is not to be dissembled that the practice and enquiry might be conducted upon a larger scale, and more agreeably to the different officers, if their income would allow it. Accordingly, although it is not the plan of this meeting to

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to canvass for subscriptions, it is hoped that its friends will thereby be augmented in such a manner as is thought proper, the public having already had an earnest that their benefactions will be wisely employed by the present managers.

On Monday, June 4th, a Course of Lectures on Physic and Chemistry will recommence at the Laboratory, Whitcomb-street, Leicester-square, at the usual morning hours, viz. The *Therapeuticks* at a quarter before eight; the *Practice of Physic* at half after eight, and the *Chemistry* at a quarter after nine, by GEORGE PEARSON, M. D. F. R. S. Senior Physician to St. George's-Hospital; of the College of Physicians, &c. A register is kept of Dr. Pearson's patients in St. George's-Hospital, and an account is given of them at a Clinical Lecture every Saturday morning at nine o'clock. The Practice of Vaccination will be shown, and Lectures given as usual, during the summer, at the Institution, No. 44, Broad-street.

Mr. SAUNDERS, demonstrator of practical anatomy at St. Thomas's Hospital, purposes to deliver during the summer, a Course of Anatomical Lectures.—The object which he has in contemplation, is to give a compendious view of anatomy, adapted to the practical purposes of medicine and surgery. The parts of the human body which are interesting merely as objects of curious speculation, will not be introduced into these lectures; but the attention will be confined exclusively to those parts that being particularly subject to disease and accident require the application of art, and consequently demand the serious consideration of every medical practitioner and surgeon. The course will comprehend the anatomy of the vital organs, organs of sense, joints, extremities, and all those parts of the human body which are most liable to become the subjects of operative surgery. The demonstrations will be conducted in such a manner as is best calculated to lead to practical inferences, and will be followed by an explanation of the different surgical operations, and, as far as his means permit, of the morbid anatomy of the parts requiring those operations. The Course will consist of thirty lectures, which will be delivered at his house, No. 24, Ely Place, Holborn, and will commence the 14th of June, at eight o'clock in the morning, and be contined every day at the same hour. The terms of attendance two guineas.

Dr. HARRINGTON has now in the press, to be ready in June or July, a Complete Overthrow of the French Theory of Chemistry; proving its unstable principles, upon the most clear and satisfactory evidence.

END OF VOL. XI.

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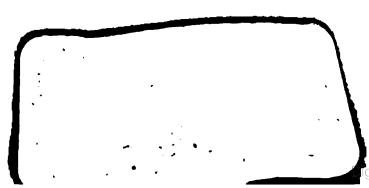

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